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(54) Title: PLANT EXTRACTS AND COMPOSITIONS COMPRISING EXTRACELLULAR PROTEASE INHIBITORS

(57) Abstract: The present invention provides a plant derived extract comprising inhibitory activity against one or more extracellular proteases which degrade human tissue matrix. Moreover, the amount of inhibitory activity in an extract can be increased by stressing the plant prior to forming an extract. These extracts are each prepared by a standard process and demonstrate the ability to inhibit one or more extracellular proteases which degrade human tissue matrix. Libraries of extracts can be prepared from stressed and non-stressed plants, wherein each of the extracts demonstrate inhibitory activity against one or more extracellular protease inhibitors. Alternatively, semi-purified and purified inhibitory compounds can be isolated from the extracts following standard procedures. In one aspect, these extracts with inhibitory activity can be used during protein purification to minimize the degradation due to extracellular proteases.

PLANT EXTRACTS AND COMPOSITIONS COMPRISING EXTRACELLULAR PROTEASE INHIBITORS

FIELD OF INVENTION

The invention pertains to the field of protease inhibitors, specifically inhibitors of extracellular proteases.

BACKGROUND OF THE INVENTION

The cells of tissues are generally in contact with a network of large extracellular macromolecules that occupies the spaces in a tissue between the component cells and also occupies the space between adjacent tissues. This extracellular matrix functions as a scaffolding on which the cells and tissue are supported and is involved actively in regulating interaction of the cells that contact it. The principal macromolecules of the extracellular matrix include the collagens (the most abundant proteins in the body) and glycosaminoglycans (complex polysaccharides which are usually bonded also to protein and then termed proteoglycans). The macromolecules that comprise the extracellular matrix are produced typically by the cells in contact therewith, for example, epithelial cells in contact with a basement membrane and fibroblasts embedded in connective tissue.

The glycosaminoglycan (proteoglycan) molecules form a highly hydrated matrix (a gel) in which elastic or fibrous proteins (such as collagen fibers) are embedded. The aqueous nature of the gel permits diffusion of metabolically required substances between the cells of a tissue and between tissues. Additional proteins that may be found in extracellular matrix include elastin, fibronectin and laminin.

The term "connective tissue" refers to extracellular matrix plus specialised cells such as, for example, fibroblasts, chondrocytes, osteoblasts, macrophages and mast cells found therein. The term "interstitial tissue" is best reserved for an extracellular matrix that stabilizes a tissue internally, filling the gaps between the cells thereof. There are also specialized forms of

extracellular matrix (connective tissue) that have additional functional roles--cornea, cartilage and tendon, and when calcified, the bones and teeth.

A structural form of extracellular matrix is the basal lamina (basement membrane). Basal laminae are thin zones of extracellular matrix that are found under epithelium or surrounding, for example, muscle cells or the cells that electrically insulate nerve fibres. Generally speaking, basal laminae separate cell layers from underlying zones of connective tissue or serve as a boundary between two cell layers wherein a basal lamina can serve as a pathway for invading cells associated with pathologic processes, or for structural organisation associated with tissue repair (i.e. as a blueprint from which to regenerate original tissue architecture and morphology).

The regulated turnover of extracellular matrix macromolecules is critical to a variety of important biological processes. Localised degradation of matrix components is required when cells migrate through a basal lamina, as when white blood cells migrate across the vascular basal lamina into tissues in response to infection or injury, or when cancer cells migrate from their site of origin to distant organs via the bloodstream or lymphatic vessels, during metastasis. In normal tissues, the activity of extracellular proteases is tightly regulated and the breakdown/production of connective tissue is in dynamic equilibrium, such that there is a slow and continual turnover due to degradation and resynthesis in the extracellular matrix of adult animals.

In each of these cases, matrix components are degraded by extracellular proteolytic enzymes that are secreted locally by cells. These proteases belong to one of four general classes: many are metalloproteinases, which depend on bound Ca^{2+} or Zn^{2+} for activity, while the others are serine, aspartic and cysteine proteases, which have a highly reactive serine, aspartate or cysteine residue in their respective active site (Vincenti *et al.*, (1994) *Arthritis and Rheumatism*, 37: 1115-1126). Together, metalloproteinases, serine, aspartate and cysteine proteases cooperate to degrade matrix proteins such as collagen, laminin, and fibronectin.

Several mechanisms operate to ensure that the degradation of matrix components is tightly controlled. First, many proteases are secreted as inactive precursors that can be activated

locally. Second, the action of proteases is confined to specific areas by various secreted protease inhibitors, such as the tissue inhibitors of metalloproteases and the serine protease inhibitors known as serpins. These inhibitors are specific for particular proteases and bind tightly to the activated enzyme to block its activity. Third, many cells have receptors on their surface that bind proteases, thereby confining the enzyme to where it is needed.

Many pathogenic bacteria produce extracellular metalloproteases, of which many are zinc containing proteases that can be classified into two families, the thermolysin (neutral) proteases and the serralysin (alkaline) proteases.

A number of patents and publications report the inhibition of one or more extracellular proteases by compounds extracted from plants. For example, Sun *et al.*, (1996) *Phytotherapy Res.*, 10: 194-197, reports the inhibition *in vitro* of stromelysin (MMP-3) and collagenase by betulinic acid extracted from *Doliocarpus verruculosis*. Sazuka *et al*, (1997) *Biosci. Biotechnol. Biochem.*, 61: 1504-1506, reports the inhibition of gelatinases (MMP-2 and MMP-9) and metastasis by compounds isolated from green and black teas. Kumagai *et al*, JP 08104628 A2, April 1, 1996 (CA 125: 67741) reports the use of flavones and anthocyanines isolated from *Scutellaris baicanlensis* roots to inhibit collagenase. Gervasi *et al.*, (1996) *Biochem. Biophys. Res. Comm.*, 228: 530-538, reports the regulation of MMP-2 by some plant lectins and other saccharides. Dubois *et al.*, (1998) *FEBS Lett.*, 427: 275-278, reports the increased secretion of deletorious gelatinase-B (MMP-9) by some plant lectins. Nagase *et al.*,(1998) *Planta Med.*, 64: 216-219, reports the weak inhibition of collagenase (MMPs) by delphinidin, a flavonoid isolated from *Solanum melongena.*

Other reports discuss the use of extracts to inhibit extracellular proteases. For example, Asano *et al.*, (1998) *Immunopharmacology*, 39: 117-126, reports the inhibition of TNF-α production using *Tripterygium wilfordii* Hook F. extracts. Maheu *et al.*, (1998) *Arthritis Rheumatol.*, 41: 81-91, reports the use of avocado/soy bean non-saponifiable extracts in the treatment of arthritis. Makimura *et al.*, (1993) *J. Periodontol.*, 64: 630-636, also reports the use of green tea extracts to inhibit collagenases *in vitro*. Obayashi *et al.*, (1998) *Nippon Keshonin Gijutsusha Kaishi*, 32: 272-279 (CA 130: 92196) reports the inhibition of collagenase-I (MMP-1) from human fibroblast and neutrophil elastase by plant extract from Eucalyptus and Elder.

When a plant is stressed, several biochemical processes are activated and many new chemicals, in addition to those constitutively expressed, are synthesised as a response. These chemicals include enzymes, enzyme inhibitors (especially protease inhibitors), lectins, alkaloids, terpenes, oligosaccharides, and antibiotics. The biosynthesis of these defense chemicals and secondary metabolites is not yet fully understood. The most studied system is the production of protease inhibitors following pest attack or mechanical wounding. On the other hand, several inducible chemicals are the products of complex biochemical pathways which require several biosynthetic enzymes to be activated.

It has been shown that many chemicals can be used to "stress" plants and to artificially stimulate biosynthesis of several new and constitutive defense chemicals. Also, different types of stress can activate distinct metabolic defense pathways, thereby leading to production of a variety of chemicals. Although the various biosynthetic defense pathways share some similarities, these pathways are characteristic of specific plant species. Therefore, treating many plants with many types of stress can lead to a vast number of collections of diverse chemicals from plant origin.

In addition to pests, fungi, and other pathogenic attacks, stressors include drought, heat, water and mechanical wounding. Furthermore, many chemicals can act as stressors that activate gene expression; these include: hydrogen peroxide, ozone, sodium chloride, jasmonic acid and derivatives, α-linoleic acid, γ-linoleic acid, salicylic acid, abscesic acid, volicitin, small oligopeptides, among others.

The use of abiotic stressors on plants has been the focus of intense studies in plant science. Artificial stresses have been used to stimulate the production of natural plant protease inhibitors for insect digestive proteases, in order to enhance crop protection against certain pests and herbivores. They have proven useful in combination with plants genetically modified to express other protease inhibitor genes. Finally, in the area of molecular farming, stresses have been used to stimulate gene expression in plants genetically modified to include an inducible coding sequence for a protein of nutraceutical and/or medicinal interest (Ryan and Farmer, U.S. Patent No. 5,935,809).

Likewise, the use of gene activators or elicitors have been described to enhance the production of volatile chemicals in plant cell cultures. These elicitors have been demonstrated to induce the activity of several enzymes such as for example phenylalanine ammonia lyase, therefore leading to an increase in the production of plant volatile components.

No one has used stress to improve or modify plants human protease inhibitor content.

BRIEF DESCRIPTION OF THE FIGURES AND TABLES

Figure 1 presents an overview of one standard procedure that is followed in order to generate the extracts of the invention each of which is derived from the solid plant material. Solvent A, B and C generally represent separate classes of solvents, for example, aqueous, alcoholic and organic. They are generally applied in a polar to non-polar order. They can be applied in a non-polar to polar order, however, in each case the solid matter must be dried prior to contacting the solid matter with the subsequent solvent.

Figure 2 describes in further detail, one standard procedure that is followed in order to generate the extracts of the invention.

Figure 3 presents an overview of one example of a commercial procedure that could be followed to prepare extracts of the invention.

Table 1 reports the inhibition of human MMP-1 by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 2 reports the inhibition of human MMP-2 by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 3 reports the inhibition of human MMP-3 by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 4 reports the inhibition of human MMP-9 by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 5 reports the inhibition of human Cathepsin B by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 6 reports the inhibition of human Cathepsin D by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 7 reports the inhibition of human Cathepsin G by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 8 reports the inhibition of human Cathepsin L by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 9 reports the inhibition of human Cathepsin K by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 10 reports the inhibition of HLE by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 11 reports the inhibition of bacteria Clostripain by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

Table 12 reports the inhibition of bacteria subtilisin by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed and non-stressed plant sources.

SUMMARY OF THE INVENTION

In one aspect the invention provides n extract from a plant, which inhibits the activity of one or more extracellular proteases, wherein the extract has been prepared by the steps of harvesting plant material, treating plant material with a solvent, separating the resulting extract from the solid material, testing an aliquot of the extract against a panel of extracellular

proteases, and retaining the extract if it inhibits the activity of one or more extracellular proteases.an extract.

In one aspect the invention provides a library of extracts from plants wherein each extract inhibits the activity of one or more extracellular proteases.

In another aspect the invention provides a library of plant extracts formed by a process comprising: contacting plant material with either an aqueous, ethanolic, or an organic solvent; isolating an extract from said plant material; analysing said extract for the presence of one or more inhibitory activities against an extracellular protease; and collected together, so as to form a library of plant extracts wherein each extract inhibits one or more extracellular proteases.

In one aspect the invention provides an extract from a plant, which inhibits the activity of one or more extracellular proteases, wherein said plant has been stressed prior to generating the extract.

In a further aspect the invention provides a library of extracts derived from plants wherein each extract inhibits the activity of one or more extracellular proteases and wherein said plants have been stressed prior to generating the extract.

In yet a further aspect provides an extracellular protease inhibitor derived from a plant comprising the steps of: contacting plant material with either an aqueous, ethanolic, or an organic solvent; isolating an extract from said plant material; analysing said extract for the presence of one or more inhibitory activities against a panel of extracellular proteases; further purifying a compound from said extract if said extract demonstrates the inhibition of one or more extracellular proteases greater than about 20%.

In another aspect the invention provides a method for increasing the levels of extracellular protease inhibitors in plants comprising the step of stressing the plant prior to forming a plant extract.

In another aspect the invention provides for the use of such extracts during protein

purification to minimize the degradation due to extracellular proteases.

DETAILED DESCRIPTION OF THE INVENTION

Definitions

Unless defined otherwise, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this invention belongs.

"Extracellular protease" means enzymes which degrade proteins (proteases) secreted outside the cell. Included MMPs, cathepsins, elastase, plasmin, TPA, uPA, kallikrein, ADAMS family members, neprilysin, gingipain, clostripain, thermolysin, serralysin,and other bacterial and viral enzymes.

"Extract of the invention," means an a composition prepared by contacting a solvent with plant material, produced following the procedures of the invention, which demonstrates inhibitory activity against one or more extracellular proteases. In one embodiment an extract of the invention demonstrates inhibitory activity against two or more extracellular proteases. In one embodiment an extract of the invention demonstrates inhibitory activity against three or more extracellular proteases. In one embodiment, an extract of the invention demonstrates inhibitory activity against four or more extracellular proteases. The solvent may be evaporated leaving a solid embodiment of the extract. In one embodiment, the inhibitory activity is greater than about 20% when measured according to one of the assays as described herein. In one embodiment a panel of extracellular proteases can be used to test the inhibitory activity of the extract.

"Panel of Extracellular Proteases" means the array of distinct extracellular proteases that are used to perform routine assays to monitor the presence or absence of inhibitory activity throughout the extraction process of the invention. In one embodiment, inhibitory activity against one or more extracellular proteases is monitored; in one embodiment, inhibitory activity against two or more extracellular proteases is monitored; in one embodiment inhibitory activity against three or more extracellular proteases is monitored; in one embodiment inhibitory activity against four or more extracellular proteases is monitored; in

one embodiment inhibitory activity against five or more extracellular proteases is monitored. One skilled in the art would appreciate that as high throughput screening techniques develop, one could routinely assay the fractions of the extracts with as many extracellular proteases as the technology permits. In general, the more enzymes that can be routinely tested the more information that can be generated during this process that will be useful for defining extracts useful to inhibit extracellular proteases.

"Potential plants" includes all species of the Kingdom Plantae, including plants under the Division Chlorophyta, Division Rhodophora, Division Paeophyta, Division Bryophyta and Division Tracheophyta; Subdivision Lycopsida, Subdivision Sphenopsida, Subdivision Pteropsida and Subdivision Spermopsida; Class Gymnospermae, Class Angiospermae, Subclass Dicotyledonidae and Subclass Monocotyledonidae. In general terms, all plants, herbs, and lower plants such as fungi and algae. Potential plants are those plants that can be subjected to the methodology of the invention in order to generate an extract which can then be tested against a panel of extracellular proteases. Those plants which yield an extract demonstrating inhibitory activity against an extracellular protease are considered to be plants and extracts comprising the subject matter of the invention.

"Potential Pre-Extract" means an extract which has not yet been determined to posess inhibitory activity against one or more extracellular proteases.

"Plant material" means any part of a plant taken indivudually or in group, could include but not restricted to leafs, flowers, roots, seeds, stems, and other part of a plant, wherein a plant may be terrestrial, aquatic or other.

"Protease inhibitor" as used herein, refers to any compound that attenuates the proteolytic activity of proteases. "Protease inhibitor" may or may not be proteinaceous.

"Stressor" as used herein, refers to any physical stress, chemical compound, or a biological agent used to elicit production of extracellular protease inhibitors as a result of activation of a defence response in a plant. Elicitors and inducers are also considered to be stressors. Any material of a plant may be contacted with a stressor, elicitor, or inducer, which is a chemical compound, for example organic aand inorganic acids, fatty acids, glycerides, phospholipids,

glycolipids, orgnaic solvents, amino acids,a nd peptides, monosaccharides, oligosaccharides, polysaccharides and lipopllysaccharides, phenolics, alkaloids, terpenes and terpenoids, antibiotics, detergents, polyamines, peroxides, ionophores, etc., or subjected to a physical treatment, such as ultraviolet radiation, low and high temperature stress, osmotic stress induced by salt or sugars, nutritional stress defined as depriving the plant of essential nutrients (N, P, or K), in order to induce or elicit increased production of one or more chemicals. Such chemical compound or physical treatment may be applied continuously or intermittently to the plant or plant part. In one embodiment, such treatment may be accomplished by contacting the plant material with a solution containing the elicitor or by irradiating the plant material or exposing the plant material to other environmental stresses such as temperature stresses.

The term "substantially purified" or "substantially pure" or "isolated," when used in reference to a molecule having protease inhibitor activity, means that the molecule is in a form that is relatively free of proteins, nucleic acids, lipids, carbohydrates or other materials with which it is naturally associated in a plant. As disclosed herein, a plant extract of the invention is considered to be substantially purified. In addition, the molecules having protease inhibitor activity can be further purified using routine and well known methods as provided herein. As such, a substantially pure protease inhibitor of the invention can constitute at least about one or a few percent of a sample, for example, at least about five percent of a sample, generally at least about twenty percent of a sample, and can be further purified to constitute at least about fifty percent of a sample, generally at least about eighty percent of a sample, and particularly about ninety percent or ninety-five percent or more of a sample. A determination that a protease inhibitor of the invention is substantially pure can be made using methods as disclosed herein or otherwise known in the art, for example, by performing electrophoresis and identifying the particular molecule as a relatively discrete band.

Other chemistry terms herein are used according to conventional usage in the art, as exemplified by The McGraw-Hill Dictionary of Chemical Terms (ed. Parker, S., 1985), McGraw-Hill, San Francisco, incorporated herein by reference).

The subject invention involves extracts from the tissues of plant species which provide inhibitory activity against extracellular proteases. In one embodiment, the present invention

relates to the use of plants to produce extracts or semi-purified/purified compounds, compositions and formulations demonstrating an inhibitory activity against one or more proteases involved in the proteolytic degradation of human extracellular matrix. Such extracts, compounds, compositions and formulations derived from plant sources, optionally from water, ethanol or organic extracts prepared from said plant tissues, and fractions separable from said extracts by chromatography or centrifugal ultra-filtration or other means. In one aspect, these extracts with inhibitory activity can be used during protein purification to minimize the degradation due to extracellular proteases.

With reference to Figure 1, the process for producing an extract of the invention begins with choosing a plant species. Then a pre-harvest treatment is selected, wherein either treatment with water, or water in addition to any combination of a stress, wherein the stress can be applied separately from the water (if the stress is drought, then the water would not be provided for the period in which the plant is to be stressed); followed by choosing whether the treated plant will be treated for storage and stored prior to contacting plant material with the first solvent. The plant material is treated with the first solvent and then the liquid is separated from the solid material (solid S2), wherein the liquid becomes Fraction F1 or Pre-Extract A. The solid S2 is treated with the second solvent and then the liquid is separated from the solid material (Solid S3), wherein the liquic becomes Fraction F2 or Pre-Extract B. The solid S3 is treated with the third solvent and then the liquid is separated from the solid material (Solid S4).

Plant Material

In one embodiment, plants that may be employed in the invention comprise: Abelmoschus esculentus; Abies balsamea; Abies lasiocarpa; Achillea millefolium; Achillea tomentosa; Aconitum napellus; Aconitum spp.; Acorus calamus; Actaea racemosa; Actinidia arguta; Actinidia chinensis; Adiantum pedatum; Adiantum tenerum; Aesculus hippocastanum; Aframomum melegueta; Agaricus bisporus; Agastache foeniculum; Ageratum conyzoides; Agrimonia eupatoria; Agropyron cristatum; Agropyron repens; Agrostis alba; Agrostis stolonifera; Alcea rosea; Alchemilla mollis; Alkanna tinctoria; Allium ampeloprasum; Allium cepa; Allium fistulosum; Allium grande; Allium porrum; Allium sativum; Allium schoenoprasum; Allium tuberosum; Allium victorialis; Aloe vera; Alpinia officinarum; Althaea officinalis; Amaranthus caudatus; Amaranthus retroflexus; Amaranthus tricolor;

Ambrosia artemisiifolia; Amelanchier alnifolia; Amelanchier canadensis; Amelanchier sanguinea; Amelanchier sanguinea x A. laevis; Amsonia tabernaemontana; Ananas comosus; Anaphalis margaritacea; Anethum graveolens; Angelica archangelica; Angelica dahurica; Angelica sinensis; Anthemis tinctoria; Anthoxanthum odoratum; Anthriscus cerefolium; Anthurium guildingii; Apium graveolens; Apocynum cannabinum; Arachis hypogaea; Aralia cordata; Aralia nudicaulis; Arctium lappa; Arctium minus; Arctostaphylos uva-ursi; Armoracia rusticana; Aronia melanocarpa; Aronia x prunifolia; Arrhenatherum elatius; Artemisia abrotanum; Artemisia absinthium; Artemisia dracunculus; Artemisia ludoviciana; Artemisia vulgaris; Asarum europaeum; Asclepias incarnata; Asclepias tuberosa; Asparagus officinalis; Aster spp.; Astilbe x arendsii; Astilboides tabularis; Athyrium asperum; Atriplex hortensis; Atropa belladonna; Avena sativa; Averrhoa carambola; Baptisia tinctoria; Beckmannia eruciformis; Begonia convolvulacea; Begonia eminii; Begonia glabra; Begonia mannii; Begonia polygonoides; Bellis perennis; Berberis vulgaris; Beta vulgaris; Betula alleghaniensis; Betula glandulosa; Boesenbergia rotunda; Boletus edulis; Borago officinalis; Brassica cepticepa; Brassica juncea; Brassica napus; Brassica nigra; Brassica oleracea; Brassica rapa; Bromus inermis; Buddleja davidii; Bupleurum falcatum; Butomus umbellatus; Caladium spp.; Calamagrostis arundiflora; Calamintha nepeta; Calendula officinalis; Camellia sinensis; Campanula rapunculus; Canna indica; Cantharellus cibarius; Capsella bursa-pastoris; Capsicum annuum; Capsicum frutescens; Carex morrowii; Carica papaya; Carthamus tinctorius; Carum carvi; Carya cordiformis; Castanea spp.; Centaurea solstitialis; Cerastium tomentosum; Chaerophyllum bulbosum; Chamaemelum nobile; Chelidonium majus; Chenopodium album; Chenopodium bonus-henricus; Chenopodium quinoa; Chrysanthemum coronarium; Cicer arietinum; Cichorium endivia subsp. endivia; Cichorium intybus; Cinnamomum verum; Cirsium arvense; Cissus discolor; Citrullus colocynthis; Citrullus lanatus; Citrus limettoides; Citrus limon; Citrus reticulata; Citrus sinensis; Citrus x paradisi; Clematis armandii; Clematis chiisanensis; Coccoloba caracasana; Cocos nucifera; Coix lacryma-jobi; Colocasia spp.; Convallaria majalis; Conyza canadensis; Corchorus olitorius; Coriandrum sativum; Cornus canadensis; Cornus mas; Cosmos sulphureus; Cotinus coggygria; Crataegus sanguinea; Crataegus spp.; Crataegus submollis; Crithmum maritimum; Cryptotaenia canadensis; Cucumis anguria; Cucumis melo; Cucumis metuliferus; Cucumis sativus; Cucurbita maxima; Cucurbita moschata; Cucurbita pepo; Cullen corylifolium; Cuminum cyminum; Curcuma longa;

Curcuma zedoaria; Cydonia oblonga; Cymbopogon citratus; Cymbopogon martinii; Cynara cardunculus subsp. cardunculus; Cyperus esculentus; Dactylis glomerata; Datisca cannabina; Datura metel; Datura stramonium; Daucus carota; Digitalis purpurea; Dimocarpus longan; Dioscorea batatas; Diospyros kaki; Dipsacus sativus; Dirca palustris; Dolichos lablab; Dryopteris filix-mas; Echinacea purpurea; Echinochloa frumentacea; Eleusine coracana; Equisetum hyemale; Erigeron speciosus; Eriobotrya japonica; Eruca vesicaria; Erysimum perofskianum; Eschscholzia californica; Fagopyrum esculentum; Fagopyrum tataricum; Festuca rubra; Filipendula rubra; Filipendula ulmaria; Filipendula vulgaris; Foeniculum vulgare; Forsythia x intermedia; Fortunella spp.; Fragaria x ananassa; Frangula alnus; Fucus vesiculosus; Fumaria officinalis; Galinsoga quadriradiata; Galium odoratum; Gaultheria hispidula; Gaultheria procumbens; Genista multibracteata; Gentiana lutea; Gentiana macrophylla; Geum rivale; Ginkgo biloba; Glechoma hederacea; Glyceria maxima; Glycine max; Glycyrrhiza glabra; Gossypium herbaceum; Guizotia abyssinica; Hamamelis virginiana; Hedeoma pulegioides; Hedychium spp.; Helianthus annuus; Helianthus strumosus; Helianthus tuberosus; Helichrysum angustifolium; Helichrysum thianschanicum; Heliotropium arborescens; Helleborus niger; Herba schizonepetae; Hibiscus cannabinus; Hordeum hexastichon; Hordeum vulgare; Hordeum vulgare subsp. vulgare; Houttuynia cordata; Humulus lupulus; Hydrastis canadensis; Hylotelephium spp.; Hymenoxys hoopesii; Hyoscyamus niger; Hypericum henryi; Hypericum perforatum; Hypericum spp.; Hypomyces lactifluorum; Hyssopus officinalis; Iberis amara; Iberis sempervirens; Inula helenium; Ipomoea batatas; Iris versicolor; Isatis tinctoria; Jeffersonia diphylla; Juglans nigra; Juniperus communis; Kochia scoparia; Koeleria glauca; Kolkwitzia amabilis; Krameria lappacea; Lactuca sativa; Lactuca serriola; Laportea canadensis; Laserpitium latifolium; Lathyrus sativus; Lathyrus sylvestris; Laurus nobilis; Lavandula angustifolia; Lavandula latifolia; Ledum groenlandicum; Lens culinaris subsp. culinaris; Lentinus edodes; Leonurus cardiaca; Lepidium sativum; Leucanthemum vulgare; Levisticum officinale; Ligularia dentata; Ligustrum vulgare; Linaria vulgaris; Lindera benzoin; Linum usitatissimum; Litchi chinensis; Lolium multiflorum; Lolium perenne; Lonicera ramosissima; Lonicera syringantha; Lotus corniculatus; Lotus tetragonolobus; Lunaria annua; Lupinus polyphyllus; Luzula sylvatica; Lychnis chalcedonica; Lycopersicon esculentum; Lycopersicon pimpinellifolium; Lysimachia clethroides; Lythrum salicaria; Madia sativa; Magnolia stellata; Malus hupehensis; Malus prunifolia; Malus spp.; Malva moschata; Malva sylvestris; Mangifera indica; Manihot esculenta; Marrubium vulgare;

Matricaria recutita; Matricaria spp.; Medicago sativa; Melaleuca alternifolia; Melilotus albus; Melilotus officinalis; Melissa officinalis; Mentha arvensis; Mentha pulegium; Mentha spicata; Mentha suaveolens; Mentha x piperita; Menyanthes trifoliata; Microlepia platyphylla; Miscanthus sacchariflorus; Miscanthus sinensis; Momordica charantia; Monarda didyma; Monarda fistulosa; Monarda spp.; Musa x paradisiaca; Myrica pensylvanica; Nasturtium officinale; Nepeta cataria; Nicotiana rustica; Nicotiana tabacum; Nigella sativa; Ocimum Basilicum; Oenothera biennis; Onobrychis viciifolia; Ophiopogon japonicus; Opuntia spp.; Origanum majorana; Origanum vulgare; Oryza sativa; Oxalis deppei; Oxyria digyna; Paeonia rubra; Paeonia spp.; Panax quinquefolius; Panicum miliaceum; Passiflora caerulea; Passiflora spp.; Pastinaca sativa; Pennisetum alopecuroides; Perilla frutescens; Persea americana; Petasites japonicus; Petroselinum crispum; Peucedanum cervaria; Peucedanum oreaselinum; Pfaffia paniculata; Phacelia tanacetifolia; Phalaris arundinacea; Phalaris canariensis; Phaseolus acutifolius; Phaseolus coccineus; Phaseolus vulgaris; Philadelphus coronarius; Phleum pratense; Phlox paniculata; Phoenix dactylifera; Physalis grisea; Physalis philadelphica; Physalis spp.; Physostegia virginiana; Phytolacca americana; Pimpinella anisum; Pisum sativum; Plantago coronopus; Plantago major; Plectranthus fruticosus; Plectranthus spp.; Pleurotus spp.; Plumbago zeylanica; Poa compressa; Poa pratensis; Podophyllum peltatum; Polygonatum odoratum; Polygonum aviculare; Polygonum chinense; Polygonum pensylvanicum; Polygonum persicaria; Pongamia pinnata; Pontederia cordata; Populus incrassata; Populus tremula; Populus x petrowskyana; Portulaca oleracea; Potentilla anserina; Poterium sanguisorba; Primula veris; Prunella vulgaris; Prunus armeniaca; Prunus cerasus; Prunus persica; Prunus spp.; Prunus tomentosa; Psathyrostachys juncea; Psidium guajava; Psidium spp.; Pteridium aquilinum; Pulmonaria officinalis; Pulmonaria saccharata; Punica granatum; Pyrus communis; Pyrus pyrifolia; Raphanus raphanistrum; Raphanus sativus; Rehmannia glutinosa; Reseda luteola; Reseda odorata; Rheum officinale; Rheum palmatum; Rheum x hybridum; Rhus aromatica; Rhus trilobata; Ribes grossularia; Ribes nigrum; Ribes rubrum; Ribes sylvestre; Ribes uva-crispa; Ribes x nidigrolaria; Ricinus communis; Rosa rugosa; Rosmarinus officinalis; Rubus allegheniensis; Rubus canadensis; Rubus idaeus; Rubus occidentalis; Rubus thibetanus; Rumex acetosa; Rumex acetosella; Rumex crispus; Rumex patientia; Rumex scutatus; Ruta graveolens; Saccharum officinarum; Salix purpurea; Salvia elegans; Salvia officinalis; Salvia sclarea; Salvia sylvestris; Sambucus canadensis; Sambucus ebulus;

Sambucus nigra; Sanguisorba minor; Sanguisorba officinalis; Santolina chamaecyparissus; Saponaria officinalis; Satureja hortensis; Satureja montana; Satureja repandra; Scolymus hispanicus; Scorzonera hispanica; Scrophularia nodosa; Scutellaria lateriflora; Secale cereale; Sechium edule; Senecio vulgaris; Serenoa repens; Serratula tinctoria; Sesamum indicum; Setaria italica; Sidalcea spp.; Silene vulgaris; Silybum marianum; Sinapis alba subsp. alba; Sium sisarum; Solanum dulcamara; Solanum melongena; Solanum scabrum; Solanum tuberosum; Solidago canadensis; Solidago spp.; Solidago virgaurea; Solidago x hybrida; Sonchus oleraceus; Sorghum bicolor; Sorghum x drummondii; Spinacia oleracea; Stachys affinis; Stachys byzantina; Stachys macrantha; Stellaria graminea; Stellaria media; Stipa capillata; Symphytum officinale; Tamarindus indica; Tanacetum balsamita; Tanacetum balsamita subsp. balsamita; Tanacetum cinerariifolium; Tanacetum parthenium; Tanacetum vulgare; Taraxacum officinale; Tetradenia riparia; Teucrium chamaedrys; Thalictrum aquilegiifolium; Thlaspi arvense; Thuja occidentalis; Thymus fragantissimus; Thymus herba-barona; Thymus praecox subsp. arcticus; Thymus pseudolanuginosus; Thymus serpyllum; Thymus vulgaris; Thymus x citriodorus; Tiarella cordifolia; Tiarella spp.; Tragopogon porrifolius; Tragopogon spp.; Trichosanthes kirilowii; Trifolium hybridum; Trifolium incarnatum; Trifolium pannonicum; Trifolium pratense; Trifolium repens; Trigonella foenum-graecum; Triticum aestivum; Triticum aestivum subsp. spelta; Triticum turgidum; Trollius x cultorum; Tropaeolum majus; Tsuga canadensis; Tsuga diversifolia; Tsuga mertensiana; Tussilago farfara; Typha latifolia; Ulmus americana; Urtica dioica; Uvularia perfoliata; Vaccinium angustifolium; Vaccinium corymbosum; Vaccinium macrocarpon; Valeriana officinalis; Valerianella locusta; Veratrum viride; Verbascum thapsus; Verbena officinalis; Veronica officinalis; Viburnum opulus; Vicia faba; Vicia sativa; Vicia villosa; Vigna angularis; Vigna mungo; Vigna unguiculata; Vinca minor; Vitis spp.; Weigela coraeensis; Weigela hortensis; Withania somnifera; x Triticosecale spp.; Xanthium sibiricum; Xanthium strumarium; Yucca filamentosa; Zea mays; Zingiber officinale; Achillea ptarmica; Ajuga reptans; Aster spp; Astilbe chinensis; Bergenia x schmidtii; Brassica chinensis; Butomus umbellatus; Buxus microphylla; Carpinus caroliniana; Centaurea dealbata; Chaenomeles x superba; Clematis alpina; Coreopsis verticillata; Cornus alba; Cornus sericea; Corylus maxima; Crambe cordifolia; Cyperus alternifolius; Dahlia spp.; Euphorbia amygdaloides; Fuchsia spp.; Fuchsia magellanica; Galium aparine; Geranium sanguineum; Geranium phaeum; Geranium pratense; Geranium sanguineum; Geranium x cantabrigiense; Glaux Maritima; Hamamelis mollis; Hedychium

coronarium; Helenium spp.; Herba Schizonepetae; Hosta sieboldiana; Hydrangea quercifolia; Ipomoea aquatica; Lamiastrum galeobdolon; Magnolia x loebneri; Malva verticillata; Matteuccia pensylvanica; Microbiata decussata; Montia perfoliata; Ocimum tenuiflorum; Oenothera fruticosa subsp fruticosa; Onoclea sensibilis; paeonia suffruticosa; Penstemon digitalis; Petasites japonicus; Physalis alkekengi; Pinus cembra; Pinus mugo; Potentilla fruticosa; Rhododendron spp.; ribes americanum; Rodgersia spp.; Rodgersia podophylla; Rubus arcticus; Rubus phoenicolasius; Rubus pubescens; Rudbeckia maxima; Sempervivum tectorum; Soleirolia soleirolii; Solidago caesia; Staphylea trifolia; Stephanandra incisa; Stewartia pseudocamellia; Strelitzia reginae; Symphoricarpos orbiculatus; Symphoricarpos albus; Taxus x media; Vernonia gigantea; Veronica austriaca ssp teucrium; Veronica beccabunga; Viburnum plicatum.

It is further contemplated by this invention that any plant may be employed in the method as a potential plant. For example, plants belonging to the following classifications may optionally be employed in order to prepare an extract of the invention when such extracts are demonstrated to posess inhibitory activities against extracellular proteases: Superdivision Spermatophyta -- Seed plants Division Coniferophyta -- Conifers Class Pinopsida Order Pinales Family Araucariaceae -- Araucaria family Family Cephalotaxaceae -- Plum Yew family Family Cupressaceae -- Cypress family Family Pinaceae -- Pine family Family Podocarpaceae -- Podocarpus family Family Taxodiaceae -- Redwood family Order Taxales Family Taxaceae -- Yew family Division Cycadophyta -- Cycads Class Cycadopsida Order Cycadales Family Cycadaceae -- Cycad family Family Zamiaceae -- Sago-palm family Division Ginkgophyta -- Ginkgo Class Ginkgoopsida Order Ginkgoales Family Ginkgoaceae -- Ginkgo family Division Gnetophyta -- Mormon tea and other gnetophytes Class Gnetopsida Order Ephedrales Family Ephedraceae -- Mormon-tea family Order Gnetales Family Gnetaceae -- Gnetum family Division Magnoliophyta -- Flowering plants Class Liliopsida -- Monocotyledons Subclass Alismatidae Order Alismatales Family Alismataceae -- Water-plantain family Family Butomaceae -- Flowering Rush family Family Limnocharitaceae -- Water-poppy family Order Hydrocharitales Family Hydrocharitaceae -- Tape-grass family Order Najadales Family Aponogetonaceae -- Cape-pondweed family Family Cymodoceaceae -- Manatee-grass family Family Juncaginaceae -- Arrow-grass family Family Najadaceae -- Water-nymph family Family Posidoniaceae -- Posidonia family Family Potamogetonaceae -- Pondweed family Family Ruppiaceae -- Ditch-grass family Family

Scheuchzeriaceae -- Scheuchzeria family Family Zannichelliaceae -- Horned pondweed family Family Zosteraceae -- Eel-grass family Subclass Arecidae Order Arales Family Acoraceae -- Calamus family Family Araceae -- Arum family Family Lemnaceae -- Duckweed family Order Arecales Family Arecaceae -- Palm family Order Cyclanthales Family Cyclanthaceae -- Panama Hat family Order Pandanales Family Pandanaceae -- Screw-pine family Subclass Commelinidae Order Commelinales Family Commelinaceae -- Spiderwort family Family Mayacaceae -- Mayaca family Family Xyridaceae -- Yellow-eyed Grass family Order Cyperales Family Cyperaceae -- Sedge family Family Poaceae -- Grass family Order Eriocaulales Family Eriocaulaceae -- Pipewort family Order Juncales Family Juncaceae -- Rush family Order Restionales Family Joinvilleaceae -- Joinvillea family Order Typhales Family Sparganiaceae -- Bur-reed family Family Typhaceae -- Cat-tail family Subclass Liliidae Order Liliales Family Agavaceae -- Century-plant family Family Aloeaceae -- Aloe family Family Dioscoreaceae -- Yam family Family Haemodoraceae -- Bloodwort family Family Hanguanaceae -- Hanguana family Family Iridaceae -- Iris family Family Liliaceae -- Lily family Family Philydraceae -- Philydraceae family Family Pontederiaceae -- Water-Hyacinth family Family Smilacaceae -- Catbrier family Family Stemonaceae -- Stemona family Family Taccaceae -- Tacca family Order Orchidales Family Burmanniaceae -- Burmannia family Family Orchidaceae -- Orchid family Subclass Zingiberidae Order Bromeliales Family Bromeliaceae -- Bromeliad family Order Zingiberales Family Cannaceae -- Canna family Family Costaceae -- Costus family Family Heliconiaceae -- Heliconia family Family Marantaceae -- Prayer-Plant family Family Musaceae -- Banana family Family Zingiberaceae -- Ginger family Class Magnoliopsida -- Dicotyledons Subclass Asteridae Order Asterales Family Asteraceae -- Aster family Order Callitrichales Family Callitrichaceae -- Water-starwort family Family Hippuridaceae -- Mare's-tail family Order Calycerales Family Calyceraceae -- Calycera family Order Campanulales Family Campanulaceae -- Bellflower family Family Goodeniaceae -- Goodenia family Family Sphenocleaceae -- Spenoclea family Order Dipsacales Family Adoxaceae -- Moschatel family Family Caprifoliaceae -- Honeysuckle family Family Dipsacaceae -- Teasel family Family Valerianaceae -- Valerian family Order Gentianales Family Apocynaceae -- Dogbane family Family Asclepiadaceae -- Milkweed family Family Gentianaceae -- Gentian family Family Loganiaceae -- Logania family Order Lamiales Family Boraginaceae -- Borage family Family Lamiaceae -- Mint family Family Lennoaceae -- Lennoa family Family Verbenaceae -- Verbena family Order Plantaginales Family Plantaginaceae -- Plantain family Order Rubiales

Family Rubiaceae -- Madder family Order Scrophulariales Family Acanthaceae -- Acanthus family Family Bignoniaceae -- Trumpet-creeper family Family Buddlejaceae -- Butterfly-bush family Family Gesneriaceae -- Gesneriad family Family Lentibulariaceae -- Bladderwort family Family Myoporaceae -- Myoporum family Family Oleaceae -- Olive family Family Orobanchaceae -- Broom-rape family Family Pedaliaceae -- Sesame family Family Scrophulariaceae -- Figwort family Order Solanales Family Convolvulaceae -- Morning-glory family Family Cuscutaceae -- Dodder family Family Fouquieriaceae -- Ocotillo family Family Hydrophyllaceae -- Waterleaf family Family Menyanthaceae -- Buckbean family Family Polemoniaceae -- Phlox family Family Solanaceae -- Potato family Subclass Caryophyllidae Order Caryophyllales Family Achatocarpaceae -- Achatocarpus family Family Aizoaceae -- Fig-marigold family Family Amaranthaceae -- Amaranth family Family Basellaceae -- Basella family Family Cactaceae -- Cactus family Family Caryophyllaceae -- Pink family Family Chenopodiaceae -- Goosefoot family Family Molluginaceae -- Carpet-weed family Family Nyctaginaceae -- Four o'clock family Family Phytolaccaceae -- Pokeweed family Family Portulacaceae -- Purslane family Order Plumbaginales Family Plumbaginaceae -- Leadwort family Order Polygonales Family Polygonaceae -- Buckwheat family Subclass Dilleniidae Order Batales Family Bataceae -- Saltwort family Order Capparales Family Brassicaceae -- Mustard family Family Capparaceae -- Caper family Family Moringaceae -- Horse-radish tree family Family Resedaceae -- Mignonette family Order Diapensiales Family Diapensiaceae -- Diapensia family Order Dilleniales Family Dilleniaceae -- Dillenia family Family Paeoniaceae -- Peony family Order Ebenales Family Ebenaceae -- Ebony family Family Sapotaceae -- Sapodilla family Family Styracaceae -- Storax family Family Symplocaceae -- Sweetleaf family Order Ericales Family Clethraceae -- Clethra family Family Cyrillaceae -- Cyrilla family Family Empetraceae -- Crowberry family Family Epacridaceae -- Epacris family Family Ericaceae -- Heath family Family Monotropaceae -- Indian Pipe family Family Pyrolaceae -- Shinleaf family Order Lecythidales Family Lecythidaceae -- Brazil-nut family Order Malvales Family Bombacaceae -- Kapok-tree family Family Elaeocarpaceae -- Elaeocarpus family Family Malvaceae -- Mallow family Family Sterculiaceae -- Cacao family Family Tiliaceae -- Linden family Order Nepenthales Family Droseraceae -- Sundew family Family Nepenthaceae -- East Indian Pitcher-plant family Family Sarraceniaceae -- Pitcher-plant family Order Primulales Family Myrsinaceae -- Myrsine family Family Primulaceae -- Primrose family Family Theophrastaceae -- Theophrasta family Order Salicales Family Salicaceae -- Willow family Order Theales Family

Actinidiaceae -- Chinese Gooseberry family Family Caryocaraceae -- Souari family Family Clusiaceae -- Mangosteen family Family Dipterocarpaceae -- Meranti family Family Elatinaceae -- Waterwort family Family Marcgraviaceae -- Shingle Plant family Family Ochnaceae -- Ochna family Family Theaceae -- Tea family Order Violales Family Begoniaceae -- Begonia family Family Bixaceae -- Lipstick-tree family Family Caricaceae -- Papaya family Family Cistaceae -- Rock-rose family Family Cucurbitaceae -- Cucumber family Family Datiscaceae -- Datisca family Family Flacourtiaceae -- Flacourtia family Family Frankeniaceae -- Frankenia family Family Loasaceae -- Loasa family Family Passifloraceae -- Passion-flower family Family Tamaricaceae -- Tamarix family Family Turneraceae -- Turnera family Family Violaceae -- Violet family Subclass Hamamelidae Order Casuarinales Family Casuarinaceae -- She-oak family Order Fagales Family Betulaceae -- Birch family Family Fagaceae -- Beech family Order Hamamelidales Family Cercidiphyllaceae -- Katsura-tree family Family Hamamelidaceae -- Witch-hazel family Family Platanaceae -- Plane-tree family Order Juglandales Family Juglandaceae -- Walnut family Order Leitneriales Family Leitneriaceae -- Corkwood family Order Myricales Family Myricaceae -- Bayberry family Order Urticales Family Cannabaceae -- Hemp family Family Cecropiaceae -- Cecropia family Family Moraceae -- Mulberry family Family Ulmaceae -- Elm family Family Urticaceae -- Nettle family Subclass Magnoliidae Order Aristolochiales Family Aristolochiaceae -- Birthwort family Order Illiciales Family Illiciaceae -- Star-anise family Family Schisandraceae -- Schisandra family Order Laurales Family Calycanthaceae -- Strawberry-shrub family Family Hernandiaceae -- Hernandia family Family Lauraceae -- Laurel family Family Monimiaceae -- Monimia family Order Magnoliales Family Annonaceae -- Custard-apple family Family Canellaceae -- Canella family Family Magnoliaceae -- Magnolia family Family Myristicaceae -- Nutmeg family Family Sonneratiaceae -- Sonneratia family Family Winteraceae -- Wintera family Order Nymphaeales Family Cabombaceae -- Water-shield family Family Ceratophyllaceae -- Hornwort family Family Nelumbonaceae -- Lotus-lily family Family Nymphaeaceae -- Water-lily family Order Papaverales Family Fumariaceae -- Fumitory family Family Papaveraceae -- Poppy family Order Piperales Family Chloranthaceae -- Chloranthus family Family Piperaceae -- Pepper family Family Saururaceae -- Lizard's-tail family Order Ranunculales Family Berberidaceae -- Barberry family Family Lardizabalaceae -- Lardizabala family Family Menispermaceae -- Moonseed family Family Ranunculaceae -- Buttercup family Family Sabiaceae -- Sabia family Subclass Rosidae Order Apiales Family Apiaceae -- Carrot

family Family Araliaceae -- Ginseng family Order Celastrales Family Aquifoliaceae -- Holly family Family Celastraceae -- Bittersweet family Family Corynocarpaceae -- Karaka family Family Hippocrateaceae -- Hippocratea family Family Icacinaceae -- Icacina family Family Stackhousiaceae -- Stackhousia family Order Cornales Family Cornaceae -- Dogwood family Family Garryaceae -- Silk Tassel family Family Nyssaceae -- Sour Gum family Order Euphorbiales Family Buxaceae -- Boxwood family Family Euphorbiaceae -- Spurge family Family Simmondsiaceae -- Jojoba family Order Fabales Family Fabaceae -- Pea family Order Geraniales Family Balsaminaceae -- Touch-me-not family Family Geraniaceae -- Geranium family Family Limnanthaceae -- Meadow-Foam family Family Oxalidaceae -- Wood-Sorrel family Family Tropaeolaceae -- Nasturtium family Order Haloragales Family Gunneraceae -- Gunnera family Family Haloragaceae -- Water Milfoil family Order Linales Family Erythroxylaceae -- Coca family Family Linaceae -- Flax family Order Myrtales Family Combretaceae -- Indian Almond family Family Lythraceae -- Loosestrife family Family Melastomataceae -- Melastome family Family Myrtaceae -- Myrtle family Family Onagraceae -- Evening Primrose family Family Punicaceae -- Pomegranate family Family Thymelaeaceae -- Mezereum family Family Trapaceae -- Water Chestnut family Order Podostemales Family Podostemaceae -- River-weed family Order Polygalales Family Krameriaceae -- Krameria family Family Malpighiaceae -- Barbados Cherry family Family Polygalaceae -- Milkwort family Order Proteales Family Proteaceae -- Protea family Order Rafflesiales Family Rafflesiaceae -- Rafflesia family Order Rhamnales Family Elaeagnaceae -- Oleaster family Family Rhamnaceae -- Buckthorn family Family Vitaceae -- Grape family Order Rhizophorales Family Rhizophoraceae -- Red Mangrove family Order Rosales Family Brunelliaceae -- Brunellia family Family Chrysobalanaceae -- Cocoa-plum family Family Connaraceae -- Cannarus family Family Crassulaceae -- Stonecrop family Family Crossosomataceae -- Crossosoma family Family Cunoniaceae -- Cunonia family Family Grossulariaceae -- Currant family Family Hydrangeaceae -- Hydrangea family Family Pittosporaceae -- Pittosporum family Family Rosaceae -- Rose family Family Saxifragaceae -- Saxifrage family Family Surianaceae -- Suriana family Order Santalales Family Balanophoraceae -- Balanophora family Family Eremolepidaceae -- Catkin-mistletoe family Family Loranthaceae -- Showy Mistletoe family Family Olacaceae -- Olax family Family Santalaceae -- Sandalwood family Family Viscaceae -- Christmas Mistletoe family Order Sapindales Family Aceraceae -- Maple family Family Anacardiaceae -- Sumac family Family Burseraceae -- Frankincense family Family Hippocastanaceae -- Horse-chestnut family

Family Meliaceae -- Mahogany family Family Rutaceae -- Rue family Family Sapindaceae -- Soapberry family Family Simaroubaceae -- Quassia family Family Staphyleaceae -- Bladdernut family Family Zygophyllaceae -- Creosote-bush family.

In one embodment, potential plants comprise: Atropa Belladonna, Erythrinia glabeliferus, Ipomea tricolor, Erythrinia crista, Celosia cristata, Gallium sporium, Laurus nobilis, Vitis labrissa, Gratiola officinalis, Symphitium officinalis, Hosta fortuna, Casia hebecarpa, Thalictum flavum, Scutellarian altissima, Portulaca oleacea, Scutellaria certicola, Physalis creticola, Geum fanieri, Gentiana tibetica, Linium hirsutum, Aconitum napellus, Podophyllum amodii, Thymus cretaceus, Hosta fortunaea, Carlina acaulis, Charnaechrista fasciculata, Pinus pinea, Pegamun hamalis, Tamarindus india, Carica papaya, Cistus incanus, Capparis spinosa inemis, Cupress lusitanica, Diopiros kaka, Erungium campestre, Aesculus woerlitzenis, Aesculus hippocastanum, Cupressus sempervirens, Celtis occidentalis, Polygonum cuspidatum, Eleagnus angustifolia, Eleagnus cemutata, Gentiana macrophilla, Brassica napa, Sesbania exaltata, Sesbania speciosa, Spartina potentiflora, Brassica juncea, Helianthus annus, Puansetia sp., Pelargoniurn zonale, Sundapsis spp., Leontopodium alpinum, Lupinus luteaus, Buxus microphilla "japonica", Liatris spinata, Rimula japonica, Betula nigra, Filipendula vulgrais, Lobelia siphitica, Gravilia robusta, Reseda luteola, Gentiana littorala, Campanula carpatica, Aesculus hypocastanum, Aesculus waertilensis, Ageratum conizoides, Psidium guajava, Ailantus altissima, Buxus microphylla "japonica", Hydrocotile asiatica, Gravilea robusta, Brugmansia suaveolens, Thymus puliglodes, Thymus lemabarona, Thymus serphylum (wild), Gaultheria procumbens, Thymus serphylum, Thymus camosus, Thymus thrasicus, Calicatus floridus, Zingiber officinalis, Lapia dulcis, Thymus vulgaris "argenteus", Thymus praecox "arcticus", Thymus puleglodes "lemons", Thymus speciosa, Thymus carnosus, Thymus pseudolamginosus, Thymus praecox, Thymus vulgaris "oregano", Ficus religiosa, Forsithsia suspensa, Chelidonium majus, Thymus wooly, Thymus portugalense, Nicotiana tabacum, Thymus cytridorus "aureus", Thymus vulgaris, Cactus officinalis, Lal lab purpurea, Juglands regia, Actinidia chinensis, Hernerocalis spp., Betula pendula, Gardenia jasminoides, Taxodium dixticum, Magnolia loebheril, Crataegus praegophyrum, Larix dedidua, Tuja orientalis "eligantissima", Tula ocidentalis "columbia", Xeupressocyparis deylandii, Pseudotsuga menzisia, Abies firma, Fautenousus qualiqualia, Alium cernum (wild), Juniperus "blue pacific", Taraxacum officinalis, Juca sp., Ilex agnifolium, Tsuga canadensis "penola", Ilex cornuta, Taxus hiksii, Taxus media,

Metasequoia glyptotrobioldes, Pinus bungiana, Boxus sempervirens, Stevartia coreana, Prunus xocane, Betula daurica, Plantago minor, Acer palmaturn "burgundy", Acer campestre, Cotynus cogygria, Quercus robur "fastigiata", Acer truncatum, Archirantus bidentata, Alum japonica, Carum capsicum, Agastache mexuicana, Prunella vulgaris, Tagetes minuta, Nepeta cataria, Ratibiunda columnus-Fera, Aster-Nova anglicae, Mirica certifera, Pittisporum tibica, Taxodium dixticum (H_20), Taxodium dixticum (Acetic acid), Plantago major, Scotch pine, Asorum canadensis, Pieras japonica, Pinus sirtrobus, Trifolium pratense, Prunus serotica, Darura stramonium, Geranium maculata, Hydrocotile asiatica, Astragulus sinicus, Centauria maculata, Ruschia indurata, Myrthus comunis, Platanus acidentalis, Liclum barbatum, Lavandula officinalis, Gravilea robusta, Hyppoach rhamnoides, Filipendula ulmaria, Betula pendula, Polygonium odoratum, Brugmansi graveolens (ralf), Rhus toxicodenta, Armoraica ristica, Ficus benjaminii, Sluffera sp., Pelagonium zonale, Allium sp., Asimina triloba, Lippa dulcis, Epilobium augustifolium, Brugmansia suaveolens (old), Brugmansia suaveolens (young), Xanthosoma sagittifolium (leaf), Xanthosoma sagittifolium (stem), Monstera deliciosa, Aglaonema commutatus, Dieffenbachia leopoldii, Anthurium andreanum, Syngoniurn podophyllum, Dracaena fragrans, Ananas comosus, Strelitzia reglinae, Dieffenbachia segiunae, Syngoniurn aurutum, Dracaena sp., Hhaemanthus katharina, Anthurium altersianum, Spathiphyllum grandiflorum, Spathiphyllum cochlearispaturn, Monstera pertusa, Anthurium magnificurn, Anthurium hookeri, Anthurium elegans, Calathea zebrina, Yucca elephantipes, Bromelia balansae, Musa textilis (Leaf), Musa textilis (Stem), *Myrthus communis*, *Olea olcaster*, *Olea europaea*, *Verium oleander*, *Cocculus laurifolius*, Microsorium punctatum, Ficus sp., Senseviera sp., Adansonia digitata, Boechimeria boloba, Piper nigrum, Phymatosorus scolopendria, Turnera ulmifolia, Nicodemia diversifolia, Tapeinochilos spectabilis, Rauwolfia tetraphylla, Ficus elastica, Cycas cirinalis, Caryota ureus, Cynnamonum zeylonicum, Aechmea luddemoniana, Foenix zeulonica, Ficus benjamina, Ficus purnila, Murraya exotica, Trevesia sungaica, Clerodendrurn speciossicum, Actinidi colonicta, Paeonia lactiflora, Paeonia suffructicisa, Quercus imbricaria, Iris alida, Portulaca olleracea, Poligonum aviculare, Iris pseudocarpus, Allium nutans, Allium *fistulosum*, *Antericum ramosum*, *Veratrum nigrum*, *Poligornun latifolia*, *Hosta lancefolia*, Hosta zibalda, Echinops sphae, Paeonia daurica, Inula hilenium, Trambe pontica, Digitalis lutea, Bactisia australis, Austolachia australis, Hissopus zerauchariсus, Feucrium hamedris, Sedum album, Heraclelum pubescens, Origanurn vulgare, Cachris alpina, Haser trilobum, Matteucia strutioptoris, Sedum telchium, Bocconia cordata, Hiuga reptans, Talictrum minus,

Anemona japonica, Clematis rectae, Talictrum sp., Alchemilla sp., Potentilla alba, Poterium sangiusorba, Minispermum dauricum, Oxobachus nictogenea, Armoracea rusticana, Cramble cardifolia, Agrimonia eupatora, Uschusa sp., Polymonium ceruleum, Valeriana officinalis, Pulmonaria molissima, Stachis lanata, Coronolla varia, Platicada grandiflora, Lavandula officinalis, Vincetocsicum officinalis, Acolypha hispida, Gnetum guemon, Psychotria nigropunctata, Psychotria metbacteriodomasica, Cobiaeum varilarturn, Phyllanthus grandifolium, Pterigota alata, Pachyra affinis, Sterulia elata, Phylidendron speciosus, Pithecelobium unguis, Sanchezia nobilis, Oreopanax capitata, Ficus triangularis, Pigelia pennata, Piper chaba, Laurus nobilis, Erythrinia caffra, Metrosideros excelsa, Osmanthus spp., Cupressus sempervirens, Jacobinia sp., Senecio platifilla, Livistona fragrans, Tetraclinis articulata hinensis, Eucaliptus rudis, Podocarpus spinulosus, Eriobotria japonica, Gingko biloba, Rhododendron spp., Thuja occidentalis, Fagopyrum suffruticosum, Geum macrophyllum, Magnolia cobus, Vinca minor, Convalaria majalis, Corylus avelana, Barbaric sp., Rosa multiflora, Ostrea carpinifolia, Ostrea connote, Quercus rubra, Tulip tree, Sorbus aucuparia, Betula nigra (leaf), Betula nigra (flower), Castanea sativa, Bergenia crassifolia, Artemisia dracunculus, Ruta graveolens, Quercus nigra, Schisandra chinensis, Betula alba, Sambucus niora, Gentiana cruciata, Encephalaris horridum, Phebodium aureum, Microlepia platphylla, Ceratoramia mexicana, Stepochlaena tenuifolia, Adianthum trapezieformis, Adianthum radiatum, Lycodium japonicum, Aessopteria crasifolia, Asplenium australasicum, Agatis robusta, Osmunda regalis, Osmundastrum claytonionum, Phyllitis scolopendrium, Polyschium braunii, Crytomium fortunei, Dryopteris filis-max, Equisetum variegatum, Anthyrium nopponicum, Anthyrium filis-femina, Parthenosicus tricuspidata, Ligustum vulgare, Charnaeciparis pisifera, Rosa cocanica, Citinis coggriaria, Pinus strobus, Celtis occidentalis, Picea schrenkiana, Cydonia oblonga, Ulmus pumila, Euonomus verrucosa, Deutria scabra, Mespilus germanica, Quercus castanufolia, Euonomus europea, Seruginea suffruticisa, Keyleiteria paniculata, Seringa josiceae, Zelcova, carpinifolia, Abies cephalonica, Taccus bacata, Taxus cuspidata, Salis babilonics, Thuja occidentalis, Actinidia colomicta, Magonia agrifolia, Aralis mandshurica, Luglands nigra, Euonimus elata, Princepia sp., Forsitsia europea, Sorbocotoneaster sp., Morus alba, Crategus macrophyllum, Eucomia ulurifolia, Sorbus cominicta, Philodendron amurense, Comus mass, Korria japonica, Parrotia persica, Jasminum frutocarus, Sulda sanganea, Pentaphylloides fruticosa, Sibirea altaiensis, Cerasus japonica, Kolkwitzia amabilis, Amigdalus nana, Acer mandshurica, Salix tamarisifolia, Amelanchier spicata, Cerasus maghabab, Prunus cerasifera, Corvllus avelana,

Acer tataricum, Viburnum opulus, Siringa vulgaris, Fraxinus exelsior, Quercus trojana, Chaernomelis superba, Pinus salinifolia, Berberis vulgaris, Cotoneaster horisontalis, Cotoneaster fangianus, Fagus silvatica, Pinus pumila, Pinus silvestris and Berberis thungergi.

Another interesting group of plants that can be considered as plants and/or potential plants of the invention comprise the plants that are indigenous to arid regions, for example, those located between 35° north latitude and 35° south latitude. In accordance with the present invention potential extracts and extracts of the invention can be obtained from from plants selected from the group comprising: the agave, Agavaceae, family including such members as: Yucca elata, Y. breviflora, Agave deserti, A. chrysantha, Dasylirion wheeleri; the buckwheat, Polygonaceae, family, such as Eriogonum fasciculatum; the crowfoot, Ranunculaceae, family, such as Delphinium scaposum, Anemone tuberosa and D. parishii; the poppy, Papaveraceae, family, including Platystemon califomicus, Argemone pleiacantha, Corydalis aurea, Eschschoizia californica and Ar. corymbosa; members of the mustard, Cruciferae, family, such as Dithyrea californica, Streptanthus carinatus and Lesquerella gordoni; members of the legume, Leguminosae, family, such as Acacia greggii, Prosopis velutina, A. constrica, Senna covesii, Cercidium floridum, C. microphyllum, Lotus huminstratus, Krameria parvifolia, Parkinsonia aculeata, Calliendia eriophylla, Lupinus arizonicus, Olyneya tesota, Astragalus lentiginosus, Psorothamunus spinosus and Lupinus sparsiflorus; members of the loasa family, Loasaceae, including Mentzelia involucrata, M. pumila and Mohavea Confertiflora; members of the cactus, Cactaceae, family, such as Carnegiea gigantia, Opuntia leptocaulis, Ferocactus wislizenii, O. bigelovii, O. pheacantha, O. versicolor, O. fulgida, Echinocereus engelmannii, Mammillaria microcarpa, O. basilaris, Stenocereins thurberi, O. violacea, M. tetrancistra, O. ramosissima, O. acanthocarpa, E. pectinatins and O. arbuscula; members of the evening primrose, Onagraceae, family, such as Oenothera deltoides, Camissonia claviformis and Oe. primiveris; members of the milkweed, Asclepiadaceae, family, including Asclepias erosa, A. sublata and Sarcostemma cynanchoides; members of the borage, Boraginaceae, family, such as Cryptantha augusti folia and Amsinckia intermedia; members of the sunflower, Compositae, family, including Baccharis sarothroides, Monoptiilon belloides, Erieron divergens, Zinnia acerosa, Melampodium leucanthan, Chaenactis fremontii, Calycoseris wrightii, Malacothrix californica, Helianthus annus, H. niveus, Geraea canescens, Hymenothrix wislizenii, Encelia farinosa, Psilostrophe cooperi, Baileya multiradiata, Bebbia juncea, Senecio douglasii, Trixis

californica, Machaeranthera tephrodes, Xylorhiza tortifolia, Cirsiinm neomexicanum, Antennaria parviflora and Ch. douglasii; members of the caltrop, Zygophyllaceae, family, including Larrea tridentata and Kallstroemia grandiflora; members of the mallow, Malvaceae, family, including Hibiscus coulteri, H. denudatus and Sphaeralcea ambigua; members of the phlox, Polemoniaceae, family, such as Luanthus aureus; members of the unicorn plant, Martyniaceae, family, such as Proboscidiea altheaefolia; members of the gourd, Cucurbitaceae, family, such as Cucurbita digitata; members of the lily, Lilaceae, family, including Calochortus kennedyi, Dichelostemma pulchellum, Allium macropetalum and Hesperocallis indulata; members of the ocotillo, Fouquieriaceae, family, including Fouquieria splendens; members of the figwort, Scrophulariaceae, family, such as Castilleja sp., Penstemon parryi and Orthocarpus purpurascens; members of the acanthus, Acanthaceae, family, including Anisacanthus thurberi, Justicia califomica and Ruellia nudiflora; members of the four o'clock, Nyctaginaceae, family, such as Allionia incarnata, Abronia villosa and Mirabilis multiflora; members of the geranium, Geraniaceae, family, including Erodium cicutarium; members of the waterleaf, Hydrophyllaceae, family, such as Nama demissum, Phacelia bombycina and Ph. distans; members of the bignonia, Bignoniaceae, family, such as Chilopsis linearis; members of the vervain, Verbenaceae, family, including Glandularia gooddugii and Verbena neomexicana; members of the mint, Labiatae, family, such as Hyptis emoryi and Salvia columbariae; members of the broomrape, Orobanchaceae, family, such as Orobanche cooperi; members of the portulaca, Portulaceae, family, such as Talinum auriantiacum; members of the carpet-weed, Aizoaceae, family, such as Sesuvium verrucosum; members of the flax, Linaceae, family, such as Linum lewisii; members of the potato, Solanaceae, family, including Nicotiana trigonophylla and Physalis lobata; and members of the cochlospermum, Cochlospermaceae, family, such as Amoreuxia palmatifida.

Pre-Harvest Treatment

Once a potential plant is selected, a pre-harvest treatment is selected, wherein the treatment can be water or water in combination with a stressor, elicitor, or inducor. One skilled in the art would appreciate to perform the procedure with water and then with a series of stressors in order to determine whether the potential plant becomes an extract of the invention which demonstrates inhibitory activity against one or more extracellular proteases.

In one embodiment, this invention relates to altering the amount and/or composition of

extracellular protease inhibitory activity by stressing a plant by chemical elicitors which act as stressor agent and activated defence plants pathways as mechanical wounding, drought, heat, or cold before tissue collection and extraction.

In one embodiment, stress involves exposing plants to a solution of one or more chemical elicitors to induce defense metabolic pathways and secondary metabolites prior to collection of plant tissues. Known chemical elicitors reported in the literature include ozone, hydrogen peroxide, jasmonic acid and its derivatives, arachidonic acid, salicylic acid and ester derivatives, alpha- and gamma-linoleic acids, volicitin, peptides, oligopeptides, saccharides, oligosaccharides such as chitosan, and synthetic chemicals such as Benzo-1,2,3-thiadiazole-7-carbathioic acid S-methyl ester (BTH).

A stressor may be one or more organic compounds. Some exemplary compounds that may be used as a stressor include Jasmonic acid, Jamonic acid lower alkyl esters, α-linoleic acid, α-linoleic acid lower alkyl esters, γ-linoleic acid, γ-linoleic acid lower alkyl esters, Arachidonic acid, Arachidonic acid lower alkyl esters, salicylic acid.

A stressor may be able to induce abiotic stresses in plants. Thus, for example, plants can be treated with one or more chemical or mechanical stresses prior to tissue collection. Mechanical stress can be performed twelve hours to ten days prior to tissue collection. In one embodiment, mechanical stress can be performed one day to three days prior to tissue collection. In one embodiment, mechanical stress can be performed three to six days prior to tissue collection. In one embodiment, mechanical stress can be performed four to eight days prior to tissue collection. In one embodiment, mechanical stress can be performed six to ten days prior to tissue collection.

Chemical stress can be induced by spraying plant material once or more than once with an aqueous or alcoholic solution of the chemical elicitor one hour to 10 days prior to tissue collection. In one embodiment, chemical stress can be induced one day to three days prior to harvesting the plant tissue; in one embodiment, chemical stress can be induced two to four days prior to harvesting the plant tissue; in one embodiment, chemical stress can be induced five to ten days prior to harvesting the plant tissue.

A chemical stress can be added by feeding a plant with an aqueous or alcoholic solution of the chemical. Likewise, the plants can be stressed by airborne transport of the chemical agents one hour to ten days prior tissue collection. In one embodiment, plants can be treated by spray one day before collection. In one embodiment, such chemical stress can be induced one hour to three days prior to harvesting the plant tissue; in one embodiment, such chemical stress can be induced two to eight days prior to harvesting the plant tissue; in one embodiment, such chemical stress can be induced five to ten days prior to harvesting the plant tissue.

Any combination of the above-mentioned stressors and treatment regiemes can be employed to induce the production or enhanced production of one or more extracellular proteases. One skilled in the art would be able to determine from the results of the assay against the panel of extracellular proteases whether it is desirable to follow one or more of the stressor regiemes.

Harvesting the Plant Material for Extraction and Optional Storage Treatment

The plant material may be used immediately after pre-harvest treatment, or it may be desirable to store the plant material for a period of time, prior to performing the extraction procedure(s). In one embodiment, the plant material could be treated prior to storage. In such cases, the treatment could include drying, freezing, lyophilisizing, or some combination thereof.

Following treatment to prepare the plant material for storage, the plant material may be stored for an extended period of time, prior to contacting the plant material with the first solvent. In one embodiment the plant material is stored less than one week. In one embodiment the plant material is stored from one week to one month. In one embodiment the plant material is stored from one month to six months. In one embodiment the plant material is stored from four months to one year. In one embodiment the plant material is stored longer than one year.

The Extraction Process

As depicted in Figure 1, there are generally three basic extraction processes which can be performed in sequence to generate potential pre-extracts. The procedure for each Extraction process entails contacting the solid plant material with a solvent with adequate mixing and for an amount of time to ensure adequate exposure of the solid material to the solvent to enable

inhibitory activity to be taken up by the solvent. . Solvent A, B and C generally represent separate classes of solvents, for example, aqueous, alcoholic and organic. They are generally applied in a polar to non-polar order. They can be applied in a non-polar to polar order, however, in each case the solid matter must be dried prior to contacting the solid matter with the subsequent solvent. The liquid is then separated from the solid (insoluble) matter by a process known to those skilled in the art, to generate two fractions: the liquid fraction which is a potential pre-extract and a solid fraction.

The term "liquid" is used to denote a distinction from the solid, insoluble matter. Thus, a liquid, which may be converted to a gas or function in a gaseous form, as in the case with steam, for example can serve as a solvent. Likewise, other non-solid solvents may be used such as highly viscous liquids or other gaseous solvents, some of which can then be converted into a liquid phase.

A liquid solvent may also indicate a composition or a mixture of solvents. Common examples include a buffered aqueous solution, such as a TRIS-HCl buffer, or an ethanol/methanol combination.

In one embodiment, selected parts of a plant (which can be fresh, dried or frozen) can be crushed either mechanically, using a grinder or any device to break plant parts into small particles, or by freezing them in liquid nitrogen. In another embodiment, plant particles can be extracted with an aqueous TRIS-HCl buffer at pH 6 – 8, in one embodiment pH 7, from 30 minutes to 8 hours, in one embodiment 30 min to 2 hours, at a temperature between 4 to 50°C, in one embodiment 4 to 25 °C; in one embodiment, 4 – 10 °C. In one embodiment, extraction can be performed at 4 °C for 30 minutes.

The solid material can be separated from the solvent by centrifugation, filtration or any other means known to those of skill in the art to separate solids from a solution, to yield aqueous, alcoholic or organic extract, a potential pre-extract. These potential pre-extracts can can be tested directly by a panel of extracellular proteases for the ability to inhibit extracellular protease activity, and/or subjected to further separation procedures to generate a potential extract.as described below.

The remaining solid can be contacted with a second solvent, such as an alcoholic solvent and a cosolvent, methanol or water In one embodiment, ethanol is used as alcoholic solvent, wherein the range of ethanol:methanol, ranges from 50:50 to 85:15, and 10 minute to one hour, in one embodiment 15 to 30minute extraction time, at a temperature range of 4 to 25 ^{o}C in one embodiment, 4 to 10 ^{o}C in one embodiment, and 4 ^{o}C in another embodiment. Adequate contact of the solvent with the plant material can be encouraged by shaking the solid suspension for 15 min to 24 hour at a temperature ranging from 4 to 50 ^{o}C.

The alcoholic extract is recovered and separated from the solids by centrifugation (the material which is insoluble in alcohol is used for organic extraction(s)). The potential pre-extract can be dried using a lyophilizer, a speed vac, a rotary evaporator, or a vacuum pump and dried under vacuum in order to remove the solvent. The dried extract can be dissolved in Tis-HCl buffer wherin the pH is between pH 6 to pH 8, in one embodiment and at pH 7 in one emodiment, and assayed against the panel of extracellular proteases for its bioactivity or, as in the case of the aqueous extract, the alcoholic extract can be treated to obtain purified extracts, as described below.

The organic extract can be obtained by shaking the residual solid for one to twenty-four hours in one embodiment, for one to fifteen hours in one embodiment, one to eight in one embodiment, one to four in one embodiment, with an organic solvent such as diethylether, hexane, dichloromethane, or ethylacetate. The solid can be separated by centrifugation or by filtration (regular or suction) and the organic solvent removed by distillation or by using a rotating evaporator. The organic extract can be dissolved in an aqueous buffer, or a mixture of an aqueous buffer and a suitable solvent (such as dimethylsulfoxide), to evaluate its bioactivity. In one embodiment the organic extracts are prepared using dichloromethane as the solvent of extraction, and the extraction is performed at room temperature for 2 hours.

Are included in the invention extracts prepared by all known large, medium and small-scale methods to prepare extracts.

Determination of Extracellular Protease Inhibitory Activity in an Extract

In order to prepare various embodiments of the invention, (i.e., extracts, compositions and formulations with extracellular protease inhibitory activity) one requires techniques for measuring qualitatively and/or quantitatively the presence of such inhibitory activity. One skilled in the art would appreciate that there are numerous methods and techniques for measuring such activity, that can be used to determine, for example, which extracts are of interest and to follow the processing of the active ingredient(s) giving rise to such activity.

Currently, there are several assays to measure MMP, elastase andcathepsins activity (for a review of these methods, see Murphy and Crabbe, In Barrett (ed.) *Methods in Enzymology. Proteolytic Enzymes: Aspartic Acid and Metallopeptidases* (New York: Academic Press, 1995)-248: 470. One method, the gelatinolytic assay, is based on the degradation of radio-labelled type I collagen. Although this method is relatively sensitive, it requires the use of radio-labelled specific substrates.

Another widely-used technique is the zymography assay. In this assay, MMP, elastase and cathepsins activity is detected by the presence of negatively-stained bands following electrophoresis in substrate-impregnated SDS polyacrylamide gels. The zymography assay is a sensitive and quantitative method for the detection of various MMPs, elastase, cathepsins and TACE in biological samples; nonetheless, it is labour intensive and has a low dynamic range. Zymography, moreover, is not suitable to measure the intrinsic net activity in biological samples: SDS dissociates MMP-TIMP complexes and activates latent enzyme forms. This is particularly important since matrix degradation ultimately depends on the ratio of free active gelatinase to latent proenzyme or TIMP-complexed forms.

A microtitreplate assay has been developed recently (Pacmen *et al.,* (1996) *Biochem. Pharm.* 52: 105-111). This assay provides measurement of net biological enzymatic activity of MMP, does not require a radioisotope safety environment, and could be used efficiently for routine measurement of inhibitory activity of MMP; however, it is not likely to be highly efficient as a diagnostic test since the incubation times are long and the sensitivity is much lower than that obtained by standard zymography and radio-labelled substrate assays.

Other methods used auto-quenched fluorogenic substrates. Many fluorogenic substrates have

been designed for the quantification of MMPs, elastase, and cathepsins activity throught fluorescent level variation mesuring (reviewed by Nagase and Fields (1996) *Biopolymers* 40: 399-416),

Fluorescence polarization assays were based on the principle that when fluorescent molecules are excited with plane polarized light, they will emit light in the same polarized plane provided that the molecule remains stationary throughout the excited state. However, if the excited molecule rotates or tumbles during the excited state, then light is emitted in a plane different from the excitation plane. If vertically polarized light is used to excite the fluorophore, the emission light intensity can be monitored in both the original vertical plane and also the horizontal plane. The degree to which the emission intensity moves from the vertical to horizontal plane is related to the mobility of the fluorescently labeled molecule. If fluorescently labeled molecules are very large, they move very little during the excited state interval, and the emitted light remains highly polarized with respect to the excitation plane. If fluorescently labeled molecules are small, they rotate or tumble faster, and the resulting emitted light is depolarized relative to the excitation plane. Therefore, FP can be used to follow any biochemical reaction which results in a change in molecular size of a fluorescently labeled molecule (e.g. protein-DNA interactions; immunoassays; receptor-ligand interactions; degradation reactions). (Adapted from Bolger R, Checovich W. (1994) Biotechniques 17(3):585-9.).

Another method uses the fluorescent activated substrate conversion (FASC) assay described in Canadian Patent No. 2,189,486 (1996) and in St-Pierre *et al.*, (1996) *Cytometry* 25: 374-380.

The Commercial Process for Preparing Extracts of the Invention

Extracts of the invention can be prepared on a commercial scale by repeating the extraction process that results in an optimal composition of extracts demonstrating an inhibitory activity of interest. As demonstrated in Figure 3, one would simply scale-up the procedure and include steps of quality control to ensure reproducible results for the resulting extracts.

Methods of Purifying or Fractionating Active Ingredients from Plant Extracts

There are a number of techniques well known in the art for isolating protease inhibitors from

natural sourcesFor example, For example, purifications can be performed using centrifugation, ultracentrifugation, filtration, liquid or gas phase chromatography (including size exclusion, affinity, etc.) with or without high pressure, lyophylisation, evaporation, precipitation with various "carriers" (PVPP, carbon, antibody, etc.), or any combination thereof. One skilled in the art, would appreciate how to use the following options, in a sequential fashion, in order to enrich each successive fraction in the activity of interest by following its activity throughout the purification procedure, using one of the assays for the inhibitory activity against an extracellular protease of interest, as defined above.

The present invention also includes compounds, chemicals, active principles, and purified or concentrated extracts that could be obtained by purification, partial purification, and/or fractionation of plant extracts that are subject of the invention. Purification, partial purification, and/or fractionation can be achieved by any methods known by those skilled in the art. These methods include, but are not limited to: solid-liquid extraction, liquid-liquid extraction, solid-phase extraction (SPE), membrane and ultrafiltration, dialysis, chromatography , selective precipitation, electrophoresis, and solvent concentration.

Solid-liquid extraction means include the use of all possible solvents known from those in the art, and covers the use of supercritical solvents, soxhlet extractors, vortex shaker, ultrasounds and any other means to enhance extraction, as well as recovery by filtration, centrifugation and any related methods as described in the literature (R. J. P. Cannell, Natural Products Isolation, Humana Press, 1998). The solvent is selected from the group consisting of, but not limited to, hydrocarbon, chlorinated solvents, organic esters, organic ethers, alcohols, water, and mixtures thereof. In the case of supercritical fluid extraction, the invention also covers the use of modifiers as described in V. H. Bright, M. Eé Pé McNally, Supercritical Fluid Technology, ACS Symp. Ser. Vol. 488, ch. 22, 1999.

Liquid-liquid extraction means include the use of any mixture of solvents known from those in the art, including solvents under supercritical conditions. Typical solvents include, but are not limited to, hydrocarbon, chlorinated solvents, organic esters, organic ethers, alcohols, water, and all possible aqueous solutions. The liquid-liquid extraction can be effected manually, semi-automated or completely automated, and the solvent can be removed or concentrated by any usual techniques known from those in the art (S. Ahuja. Handbook of

Bioseparations, Academic Press, 2000).

Solid-phase extraction (SPE) means include techniques using cartridges, columns or any other devices used in this technique and known in the art. The sorbents that may be used with this method include but are not limited to silica gel (normal phase), reverse phase silica gel (modified silica gel), ion-exchange resins, and fluorisil. The invention also includes the use of scavenger resins or any others trapping reagents attached to solid supports derived from organic or inorganic macromolecular materials to remove selectively active ingredients or any constituents from said extracts.

Membrane, reverse osmosis and ultrafiltration means include the use of all types of membranes known from those in the art, as well as the use of pressure, vacuum, centrifugal force, and/or any other means that can be utilized in membrane and ultrafiltration processes (S. Ahuja, Handbook of Bioseparations, Academic Press, 2000).

Dialysis means includemembranes having molecular weight cut-offs varying from less than 0.5 KDa to larger than 50 KDa. The invention also covers the recovery of purified and/or fractionated extracts from either the dialysate or the retentate by any means known in the art including but not limited to evaporation, reduced pressure evaporation, distillation, vacuum distillation, and lyophilization.

Chromatographic means include all means of carrying out chromatography known by those skilled in the art and described in G. Sofer, L. Hagel, Handbook of Process Chromatography, Academic Press, 1997 . Fractionation, partial purification, and/or purification can be carried out by but not limited to regular column chromatography, flash chromatography, high performance liquid chromatography (HPLC), medium pressure liquid chromatography (MPLC), supercritical fluid chromatography (SFC), countercurrent chromatography (CCC), moving bed chromatography, simulated moving bed chromatography, expanded bed chromatography, and planar chromatography. With every chromatographic methods, sorbents that may be used include but is not limited to silica gel, alumina, fluorisil, cellulose and modified celluloses, all possible modified silica gels, all types of ion-exchange resins, all types of size exclusion gels and any other sorbents known from those skilled in the art and described in T. Hanai, HPLC: A Practical Guide, RSC Press,UK 1999. The present invention

also includes the use of two or more solvent gradients to effect the fractionation, partial purification, and/or purification of said active extracts in any chromatographic methods. The solvents that may be utilized include but are not limited to hexanes, pentane, petroleum ethers, cyclohexane, heptane, diethyl ether, methanol, ethanol, isopropanol, propanol, butanol, isobutanol, tert-butanol, water, dichloromethane, dichloroethane, ethyl acetate, tetrahydrofurane, dioxane, tert-butyl methyl ether, acetone, and 2-butanone. When water or and aqueous phase is used, it may contains certain amounts of iorganic or organic salts and the pH may be adjusted to different values with an acid or a base to enhance fractionation and/or purification.

In the case of planar chromatography, the present invention includes the use of all variants of this type of chromatography including but not limited to one- and two dimension thin-layer chromatography (1D- and 2D-TLC), high performance thin-layer chromatography (HPTLC), and centrifugal thin-layer chromatography (centrifugal TLC).

In the case of countercurrent chromatography (CCC), the present invention includes the use of manual, semi-automated, and automated systems, and the use of all possible solvents and solvent combinations necessary to effect fractionation and/or purification of said active extracts as described in W. D. Conway, R. J. Petroski, Modern Countercurrent Chromatography, ACS Symp. Ser. Vol. 593, 1995. Solvent removal and/or concentration can be effected by any means known by those skilled in the art, including but not limited to reduced pressure evaporation, evaporation, reduced pressure distillation, distillation, and lyophilization.

The present invention includes the fractionation, partial purification, and purification of said active plant extracts by expanded bed chromatography, moving and simulated moving bed chromatography, and any other related methods known by those skilled in the art and described in G. Sofer, L. Hagel, Handbook of Process Chromatography, Academic Press, 1997 and S. Ahuja, Handbook of Bioseparations, Academic Press, 2000.

Selective precipitation means includes the use of all possible solvents and solvent combinations, the use of temperature changes, the addition of precipitent and/or modifiers, and/or modifying the pH by adding a base or an acid to effect a selective precipitation of

active principles or any other constituents.

Further, the present invention covers the fractionation, partial purification, and purification of said active plant extracts by electrophoresis and other related techniques known tothose skilled in the art.

The invention also includes the fractionation, partial purification, and/or purification of said active plant extracts by steam distillation, hydrodistillation, or any other related methods of distillation known from those in the art (L. M. Harwood, C. J. Moody, Experimental Organic Chemistry, Blackwell Scientific Publications, UK, 1989).

The process of purifying the active component(s) also includes the concentration of purified or partially purified chemicals, active ingredients, active principles by solvent removal of said plant extracts and/or fractionated plant extracts, and/or purified plant extracts. The techniques of solvent removal are known to those skilled in the art and include but are not limited to rotary evaporation, distillation (normal and reduced pressure), centrifugal vacuum evaporation (speed-vac), and lyophilization.

One embodiment of the invention includes the concentration of chemicals, active ingredients, active principles by solvent removal of said plant extracts and/or fractionated plant extracts, and/or purified plant extracts. The techniques of solvent removal are known to those skilled in the art and include but are not limited to rotary evaporation, distillation (normal and reduced pressure), centrifugal vacuum evaporation (speed-vac), and lyophilization.

To get a better understanding of the invention described herein, the following examples are set forth. It should be understood that these examples are for illustrative purposes only. Therefore, they should not limit the scope of this invention in any way.

EXAMPLES

EXAMPLE I: ***Preparation of Stressed and Non-stressed Plant Extracts***

Pre-Harvest TreatmentAerian parts of a living plant are sprayed with an aqueous solution of gamma linolenic acid (6,9,12-Octadecatrienoic acid, Sigma L-2378) (stress G) or arachidonic acid (5,8,11,14-Eicosatetraenoic acid, Sigma A-3925) (stress A) (400 μM in water with 0.125% (v/v) Triton X-100) to completely cover the leaves.

Harvest Solid S1 and Optional Storage Treatment

Twenty to twenty-four hours after the stress, more than 4 grams of leaves, stems, fruit, flowers, seeds or other plant parts are harvested and frozen immediately in dry ice, then transferred as soon as possible to a -20ºC freezer until use. Plant materials may be stored at -20 C for a long period of time, more than a year, without losing inhibitory activity. Temperature is monitored to ensure a constant condition.

Stressed and non-stressed plant specimens are collected as wet samples and stored at –20°C for various periods of time, and are submitted to a process which generats 3 subfractions: aqueous, ethanolic and organic fractions. Complete extraction process are performed in a continuous cycle using the following steps. An initial 5g of plant specimen is homogenized in liquid nitrogen with a blender. The resulting powder is weighed.

Extraction Process I: Aqueous Extraction

To each 4.5 grams of plant powder, 12 ml of a cold solution of 100 mM Tris, pH 7.0 is added. The mixture is thoroughly vortexed for 2 minutes. The mixture is kept on ice for 30 minutes and vortexed after each 10 minute period of time. The sample is centrifuged in a Corex™ 30 ml tube for 5 minutes at 4500 rpm. The resulting supernatant is decanted in a 15 ml tube after filtration with a Miracloth™ filter. This extract is therefore referred as the Potential Pre-Extract A. The pellet, referred as Solid S2, is kept for ethanolic extraction.

The aqueous extract (Potential Pre-Extract A) is further purified in order to determine its extracellular protease inhibition capability. The Potential Pre-Extract A is purified by by size-exclusion chromatography, wherein the aqueous extract is chromatographed on a calibrated Sephadex G-25 column (1 × 10 cm) using a 20 mM Tris-HCl, 150 mM NaCl, pH 7.5 buffer as eluant. Fractions corresponding to compounds that seem to have a molecular weight (MW)

less than 1500 daltons (D) are pooled to constitute the purified aqueous extract that is tested for inhibitory activity in an assay as described in Example II.

Prior to this analysis, the extract is treated with 10% gelatin-Sepharose (Pharmacia Biotech, Uppsala, Sw.) in order to remove unspecific enzyme ligands. To 1mL of extract, 100µL of gelatin-Sepharose resin is added in a microassay tube, the solution in the tube is mixed, kept on ice for 30 minutes, and then centrifuged 5 minutes at 5,000rpm. The supernatant is removed and used directly for assays.

Extraction Process II: Alcholic Extraction

To the pellet, Solid S2, collected from the previous aqueous extraction, 12 ml of cold ethanol:methanol (85:15) is added and the mixture is thoroughly vortexed for 2 minutes. The mixture is kept on ice for 30 minutes and vortexed every 10 minutes. The sample is centrifuged in a Corex™ 30 ml tube for 5 minutes at 4,500 rpm. The resulting supernatant is decanted in a 15 ml tube after filtration with a Miracloth™ filter. The pellet, referred as Solid S3 is kept for the subsequent organic extraction. This extract is therefore referred as the Potential Pre-Extract B.

The ethanolic extract, Potential Pre-Extract B, is purified by liquid/liquid extraction prior to analysis by enzymatic assay. For this purpose, 1 ml of ethanolic extract is evaporated under vacuum, dissolved in 150 µl of dimethylsulfoxide (DMSO), and completed to a final volume of 1.5 ml with Tris buffer (final concentration: Tris-HCl 20 mM; pH 7.5). Four ml of hexane is added to the Tris phase in a glass tube and the tube is thoroughly vortexed, then allowed to form a biphasic liquid. The organic phase is removed and the extract is submitted to a second round of liquid/liquid extraction. The aqueous phase is removed and treated with 10% gelatin-Sepharose (Pharmacia Biotech, Uppsala, Sw.) to remove unspecific enzyme ligands prior to conducting subsequent assays. To 1 ml of extract, 100µL of gelatin-Sepharose resin is added in a microassay tube, the tube is mixed, kept on ice for 30 minutes, and then centrifuged 5 minutes at 5,000rpm. Supernatant is removed and used directly for assays as described in Example II.

Extraction Process III: Organic Extraction

To the pellet, Solid S3, collected from previous ethanolic extraction, 12 ml of cold

dichloromethane is added and the mixture is thoroughly vortexed for 2 minutes. The mixture is kept on ice for 30 minutes and vortexed after each 10 minutes period. The sample is centrifuged in a Corex™ 30 ml tube for 5 minutes at 4,500 rpm. The resulting supernatant is decanted in a 15 ml glass tube after filtration with a Miracloth™ filter. The final pellet is discarded. The organic solvent is evaporated under vacuum and the phase is dissolved with dimethylsulfoxide (DMSO). This extract is therefore referred as the Potential Pre-Extract C, which was futher purified by solid phase extraction prior to analysis by enzymatic assay.

In order to assay the Potential Pre-Extract C, the organic extract is diluted 1:10 in a solution of DMSO:Methanol:Tris (20mM, pH 7.5) (10 :50 :40) (Solution A), ie, 220 µl of extract is added to 2.0 ml of solution A. After 10 seconds of vigorous vortex, the mix is sonicated for 10 seconds. Dissolved extracts are subsequently applied to a solid phase extraction plate (Discovery SPE-96, Sigma Chemical Co, St-Louis, Mo). After initial conditioning of the columns with 1 ml of methanol, columns are equilibrated with solution A, and extract samples are deposited on the columns. Elution is completed with solution A (final volume of 2 ml) and this fraction is used directly in assays as described in Example II.

EXAMPLE II: ***In vitro Enzyme Inhibition Assays***

The inhibitory activity of sample compositions towards human MMP-1, human MMP-2, human MMP-3, human MMP-9, human cathepsin-B, human cathepsin-D, human cathepsin-G, human cathepsin-L, human cathepsin-K, human leukocyte elastase (HLE), bacteria clostripain and bacteria subtilisin can be determined using either fluorogenic substrates or the FASC assay.

Measurement of human MMP-1, -2, -3 and -9 activity with fluorogenic peptidic substrates

MMP-1, -2, -9 are purified from natural sources (human immortalized cell lines: 8505C (Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH) for MMP-1, HT-1080 (ATCC, Manassas, VA) for MMP-2 and THP-1 (ATCC, Manassas, VA) for MMP-9) as described in literature and based on protocols found in I.M. Clark: «*Matrix metalloproteinases protocols*», Humana Press (2001). Recombinant human MMP-3 is overexpressed in *E. Coli* and purified according to Windsor LJ, Steele DL (2001), Methods Mol Biol 151:191-205. Proteolytic activity of these proteases is evaluated with the assay based on the cleavage of auto-quenched peptide substrate : (MCA-Pro-Leu-Gly-Leu-Dpa-Ala-Arg-NH_2 ·TFA [Dpa = N-3-(2,4-

dinitrophenyl)-L-2,3-diaminopropionyl]) for MMP-1, -2, and –9; and, MCA-Arg-Pro-Lys-Pro-Val-Glu-Nva-Trp-Arg-Lys(DNP)-NH_2 (DNP = 2,4-dinitrophenyl; Nva = L-norvaline) for MMP-3 (Calbiochem, San Diego, CA). In the intact peptide, Dpa or DNP quenches the MCA fluorescence. Cleavage of the peptide causes release of the fluorescent MCA group which is then quantitated on a fluorometer (Gemini XS, Molecular Devices, Sunnyvale, CA). The assay is performed in TNCZ assay buffer (20mM Tris-HCl; NaCl 150mM; $CaCL_2$ 5mM; $ZnCl_2$ 0.5mM; pH 7.5) with human purified proteases (I.M. Clark: «*Matrix metalloproteinases protocols*», Humana Press (2001). The substrate, primarily dissolved in DMSO is then redissolved in TNCZ buffer for the assay. In a typical assay, 10 µl of purified enzyme (1-50 ng) and 5µl of dissolved substrate (final concentration of 10 µM) is mixed in a final volume of 75 µl (completed with TNCZ). All assays were performed in 96 well plate and the reaction is started by the addition of substrate. Assays are measured (excitation 325 nm, emission 392 nm) for 20, 40 and 60 minutes.

Measurement of human Cathepsin L and K activity with fluorogenic peptidic substrate.

Human recombinant cathepsins L and K are overexpressed in *P. Pastoris* according to Krupa JC, Mort JS. (2000), Anal Biochem 283(1):99-103. The assay is similar to the previous except for the auto-quenched peptidic substrate : Z-Arg-Phe-AMC, 2HCl (Bachem California, Torrance, CA) and reaction buffer. Assays for Cathepsin L are performed in 20mM acetate pH 5.5, 1mM EDTA buffer and assays for Cathepsin K in 20mM acetate pH 4.2, 1mM EDTA. Assays are monitored with fluorometer settled at excitation 380 nm/emission 460 nm wavelengths (Krupa JC, Mort JS. (2000), Anal Biochem 283(1):99-103).

Measurement of human MMP-9, Cathepsin B, Cathepsin G, and human leukocyte elastase (HLE) activity using the FASC assay

Human Cathepsin B and G and human leukocyte elastase are obtained from Calbiochem (San Diego, CA). Human MMP-9 is purified as previously described. The assay is based on the method described in Canadian Patent No. 2,189,486 (1996) and in St-Pierre et al., (1996) Cytometry 25:374-380. For the assay, 5 µl of the purified enzyme (1-100 ng), 5 µl of concentrated buffer solution (20mM Tris-HCl; NaCl 150mM; $CaCL_2$ 5mM; $ZnCl_2$ 0.5mM; pH 7.5), and 5 µl of gelatin-FITC beads are typically used in a final volume of 100 µl. The assay is performed by incubation of the reaction mixture for 90 minutes at 37°C. The reaction is stopped by the transfer of the mix in 0.5 ml of 20 mM Tris, 150 mM NaCl; pH 9.5 buffer. This tube is

analyzed in a flow cytometer (Epics MCL, Beckman Coulter, Mississauga, Ontario) as described in Canadian Patent No. 2,189,486 (1996).

Measurement of human Cathepsin D, Cathepsin B, Cathepsin G and HLE activity with a fluorogenic proteic substrate

Cathepsin D is purified from human MCF-7 cells according to Stewart AJ, Piggott NH, May FE, Westley BR. (1994), Int J Cancer 57(5):715-8. Cathepsin B, Cathepsin G and HLE are obtained as previously described. The activities of Cathepsin D, Cathepsin B, Cathepsin G and HLE are measured by an assay based on the increase of fluorescence of a proteic substrate (Haemoglobin in the case of Cathepsin D and B and beta-casein in the case of Cathepsin G and HLE) heavily labelled with Alexa-488 dye (Molecular Probes, Eugene, Or). The substrate, when highly labelled with the dye, will almost quench the dye fluorescence. Cleavage of the substrate will result in an increase of the fluorescence which can be measured with a spectrofluorometer, and which is proportional to protease activity. Typically, 10 µl of purified human Cathepsin D, Cathepsin B, Cathepsin G or HLE (10-50 ng) and 10µL of Hemoglobin-Alexa488 or beta-casein-Alexa488 (100 ng) are assayed in final volume of 75 µl adjusted with 20 mM citrate pH 3.3 buffer in the case of Cathepsins D and B or TNCZ buffer in the case of Cathepsin G and HLE. The reaction is performed as already described except that the fluorescence is read at excitation 488 nm/emission 525 nm wavelengths.

Subtilisin assay

Subtilisin (isolated from *B. Subtilisis*) is purchased from Fluka. Assays are performed with a fluorogenic peptide (Z-Gly-Gly-Leu-AMC, Bachem California, Torrance, CA) as already described for MMPs with the following modification: the assay is buffered with 20mM Tris, 150mM NaCl; pH 7.5 and the results are read at excitation 380 nm/emission 460 nm wavelengths.

Clostripain assay

Clostripain from *Clostridium histolyticum* (Worthington Lakewood, NJ) is prepared and activated as described by manufacturer's protocol. The activity is determined by using Z-Arg-Arg-AMC, 2HCl (Calbiochem, San Diego, CA) as a fluorogenic peptidic substrate and the incubation buffer is 75mM phosphate, pH 7.6. The reaction is performed as already described except that the fluorescence is read at excitation 380 nm/emission 460 nm

wavelengths.

Extract inhibition assay

Before a typical assay, aqueous extractsprepared as described in Example I are preincubated with 1:10 of gelatin-Sepharose 4B™ for 30 minutes to remove fluorescence quenching. For the ethanolic extract, an initial hexane extraction is performed and samples are treated with 1:10 of gelatin-Sepharose 4B™ to remove quenching.

In a typical fluorescent assay, 10 µl of purified enzyme at concentrations previously mentioned for the enzymatic assay, 5 µl of dissolved fluorogenic peptid or 10 µl of dissolved fluorescent proteic substrate (final concentration of 10 µM) and 40µL of the aqueous, ethanolic or organic extract to be tested and prepared as described in Example I are mixed in a final volume of 75 µl (completed with TNCZ for fluorogenic peptide substrate assay or 20mM citrate pH 3.3 buffer for fluorescent protein substrate assay). All assays are performed in 96 well plate and the reaction is started by the addition of substrate. Assays are measured (excitation 325 nm, emission 392 nm for peptide and excitation 488 nm/emission 525 nm wavelengths for protein) for 20, 40 and 60 minutes. Activity and inhibition values are determined from the increase in fluorescence

For the FASC assay, 35 µl of the treated extract prepared as described in Exampla I, 5 µl of the purified enzyme prepared as described previously, 5 µl of concentrated buffer solution (TNCZ), and 5 µl of gelatin-FITC beads are typically used. The initial step of the assay is the incubation of the reaction without beads for a 30 minutes period on ice to allow the binding of inhibitors to enzyme. Fluorescent beads are added and the reaction mix is incubated for 90 minutes at 37°C. The reaction isstopped by transfer of the mix in 0.5 ml of 20 mM Tris, 150 mM NaCl; pH 9.5 buffer. This tube isanalyzed in the flow cytometer (Epics MCL, Beckman Coulter, Mississauga, Ontario) as described in Canadian Patent Application No. 2,189,486 (1996).

Results of the inhibition studies are shown in Tables 1- 13. Table 2 reports the inhibition of human MMP-1 by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 3 reports the inhibition of human MMP-2 by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and

non-stressed (T) plant sources. Table 4 reports the inhibition of human MMP-3 by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 5 reports the inhibition of human MMP-9 by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 6 reports the inhibition of human Cathepsin B by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 7 reports the inhibition of human Cathepsin D by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 8 reports the inhibition of human Cathepsin G by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 9 reports the inhibition of human Cathepsin L by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 10 reports the inhibition of human Cathepsin K by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 11 reports the inhibition of HLE by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 12 reports the inhibition of bacteria subtilisin by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. Table 13 reports the inhibition of bacterial clostripain by aqueous (A), ethanolic (R) and organic (S) extracts for exemplary stressed (A and G) and non-stressed (T) plant sources. The inhibition is reported as percentage (%) of inhibition of substrate degradation as compared with the degradation without extract. The inhibition is reported as percentage (%) of inhibition of substrate degradation as compared with the degradation without extract.

EXAMPLE III: ***Examplary purification of inhibitory activity found in an extract***

Extracts were separated by HPLC on an Agilent 1100 system (San Fernando, CA). Briefly, 100µL of a crude extract prepared as described in Example I was applied on a C18 reverse-phase column (Purospher RP-18 5µm, 4.0 x 125mm (HP), Agilent, San Fernando, CA). Elution of compounds was achieved with a linear gradient of 10-85% acetonitrile. Fractions were collected, evaporated, resuspended in aqueous buffer and then reanalysed for their inhibition activity on specific enzymes as already described. Fractions of interest (demonstrating a biological activity) where then reisolated at a larger scale for further analysis

and characterization.

The invention being thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.

Table I 1
MMP-1 Inhibition

Nom latin	Stress	extrait	Inhibition (%)		Nom latin	Stress	extrait	Inhibition (%)
Achillea millefolium	A	O	22.2		Eschscholzia californica	A	R	74.1
Acorus calamus	A	O	100.0		Filipendula rubra	A	O	51.7
Actinidia arguta	A	O	56.4		Foeniculum vulgare	A	O	86.2
Agastache foeniculum	A	S	30.4		Fragaria x ananassa	A	O	23.7
Alchemilla mollis	A	4	36.4		Fragaria Xananassa	A	S	40.6
Allium cepa	A	O	61.4		Fragariax ananassa	A	R	28.3
Allium grande	A	R	46.5		Galinsoga ciliata	A	R	29.7
Allium porrum	A	R	25.0		Gallium odoratum	A	6	48.8
Allium porrum	A	O	98.9		Gaultheria hispidula	A	R	23.9
Allium sativum	A	O	42.5		Glycine max	A	R	24.7
Allium sativum	A	R	98.7		Glycine max	A	S	29.6
Allium schoenoprasum	A	R	22.3		Glycine max	A	O	100.0
Allium Tuberosum	A	R	29.9		Guizotia abyssinica	A	S	39.4
Allium Tuberosum	A	O	100.0		Hamamelis virginiana	A	R	49.1
Althaea officinalis	A	S	21.6		Helianthus Tuberosus	A	O	95.9
Angelica archangelica	A	S	45.9		Heliotropium arborescens	A	R	25.0
Anthemis nobilis	A	R	34.5		Hordeum hexastichon	A	O	100.0
Aralia nudicaulis	A	O	100.0		Hordeum vulgare	A	O	46.2
Armoracia rusticana	A	O	31.2		Vulgare	A	O	43.8
Armoracia rusticana	A	S	39.7		Inula helenium	A	O	25.8
Aronia melanocarpa	A	R	39.8		Lathyrus sativus	A	0	27.1
Aster sp	A	O	67.6		Leonurus cardiaca	A	O	34.4
Beckmannia eruciformis	A	O	24.1		Levisticum officinale	A	R	31.7
Beta vulgaris	A	R	41.2		Lolium multiflorum	A	O	39.0
Beta vulgaris spp. Maritima	A	O	44.1		Lotus corniculatus	A	O	100.0
Brassica napus	A	O	26.3		Malva sylvestris	A	R	22.8
Brassica oleracea	A	S	28.6		Matricaria recutita	A	O	25.1
Brassica oleracea	A	R	33.8		Matteucia pensylvanica	A	R	48.1
Brassica Oleracea	A	O	100.0		Medicago sativa	A	R	25.1
Brassica rapa	A	R	61.4		Melissa officinalis	A	O	100.0
Calamintha nepeta	A	R	40.2		Mentha piperita	A	O	60.1
Camellia sinensis	A	O	39.3		Mentha suaveolens	A	O	35.1
Capsicum annuum	A	R	34.3		Nepeta cataria	A	O	100.0
Capsicum annuum	A	O	88.3		Nicotiana rustica	A	R	20.7
Capsicum frutescens	A	R	39.4		Origanum vulgare	A	R	60.5
Chenopodium bonus - henricus	A	O	100.0		Origanum vulgare	A	O	73.2
Chenopodium bonus-henricus	A	R	37.3		Perilla frutescens	A	R	74.4
Chenopodium quinoa	A	O	66.3		Perilla frutescens	A	O	92.4
Chrysanthenum coronarium	A	R	37.4		Petroselinum crispum	A	R	77.4
Cichorium intybus	A	R	22.0		Phacelia tanacetifolia	A	R	52.8
Cichorium intybus	A	S	66.9		Phaseolus coccineus	A	R	20.9
Citrullus lanatus	A	O	41.9		Phaseolus coccineus	A	S	34.2
Cornus canadensis	A	S	73.0		Phaseolus Vulgaris	A	S	29.2
Crataegus sp	A	O	100.0		Phaseolus vulgaris	A	R	56.1
Cucumis Anguria	A	S	34.2		Phaseolus Vulgaris	A	R	60.0
Cucurbita moschata	A	O	27.3		Phaseolus Vulgaris	A	O	100.0
Cucurbita pepo	A	O	84.9		Phlox paniculata	A	O	100.0
Cymbopogn citratus	A	O	100.0		Pimpinella anisum	A	S	100.0
Cymbopogon citratus	A	R	22.1		Pimpinella anisum	A	R	72.2
Cyperus esculentus	A	R	25.8		Plantago coronopus	A	R	23.7
Cyperus esculentus	A	O	28.1		Plectranthus sp.	A	O	25.0
Dactylis glomerata	A	O	25.5		Poa compressa	A	O	31.5
Daucus carota	A	O	43.4		Potentilla anserina	A	R	71.2
Daucus carota	A	R	100.0		Pysalis ixocarpa	A	R	32.1
Dipsacus sativus	A	O	35.3		Raphanus raphanistrum	A	O	31.5
Dirca palustris	A	S	47.9		Raphanus sativus	A	O	100.0
Eruca vesicaria	A	R	33.7		Raphanus sativus	A	O	30.2
Eschscholzia californica	A	O	61.1		Rheum officinale	A	O	79.1

Table I
MMP-1 Inhibition

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Rheum rhabarbarum	A	R	22.9		Aronia melanocarpa	G	S	66.5
Rheum rhabarbarum	A	R	32.8		Artemisia dracunculus	G	S	79.0
Ribes nigrum	A	O	100.0		Artemisia dracunculus	G	R	50.3
Ribes nigrum	A	R	100.0		Asparagus officinalis	G	O	96.4
Ribes salivum	A	R	48.6		Bellis perennis	G	R	44.1
Ribes sylvestre	A	S	26.5		Beta vulgaris spp. Maritima	G	R	43.7
Ribes uva-crispa	A	R	100.0		Beta vulgaris spp. Maritima	G	O	34.9
Rubus canadensis	A	R	46.1		Betula glandulosa	G	S	40.8
Rubus canadensis	A	R	53.1		Borago officinalis	G	O	30.3
Rubus idaeus	A	R	100.0		Borago officinalis	G	R	29.7
Salvia officianalis	A	O	100.0		Brassica cepticepa	G	R	21.9
Salvia sclarea	A	S	43.8		Brassica oleracea	G	O	33.6
Satureja montana	A	R	100.0		Brassica oleracea	G	O	100.0
Solanum dulcamara	A	S	43.8		Brassica rapa	G	O	42.5
Solanum melanocerasum	A	R	37.2		Brassica rapa	G	R	40.2
Solanum tuberosum	A	R	100.0		Calamintha nepeta	G	O	28.7
Sorghum dochna	A	O	100.0		Calendula officinalis L.	G	O	100.0
Stachys byzantina	A	S	28.9		Camellia sinensis	G	O	46.4
Stellaria media	A	S	33.1		Campanula rapunculus	G	R	27.2
Tanacetum parthenium	A	O	28.9		Capsella bursa-pastoris	G	R	24.1
Tanacetum vulgare	A	R	76.0		Capsicum annum	G	O	36.0
Taraxacum officinale	A	O	65.7		Chaerophyllum bulbosum	G	R	38.9
Thymus praecox subsp arcticus	A	O	64.2		Chenopodium quinoa	G	O	100.0
Thymus praecox subsp arcticus	A	R	88.2		Cichorium intybus	G	S	44.6
Thymus vulgaris	A	R	42.7		Circium arvense	G	R	30.3
Thymus x citriodorus	A	O	34.7		Citrullus lanatus	G	R	21.2
Trichosanthes kirilowii	A	R	31.8		Cucurbita pepo	G	O	59.5
Trifolium hybridum	A	R	96.0		Cucurbita Pepo	G	O	40.2
Trifolium incarnatum	A	R	100.0		Cuminum cyminum	G	R	25.5
Trifolium pannonicum	A	R	27.7		Cymbopogon citratus	G	R	33.7
Trifolium repens	A	R	79.5		Datura stramonium	G	O	73.5
Vaccinum augustifolium	A	R	52.5		Daucus carota	G	O	86.0
Vaccinum macrocarpon	A	O	64.5		Daucus carota	G	O	27.9
Vicia sativa	A	O	60.8		Dryopteris filix-mas	G	O	21.9
Vicia sativa	A	R	28.6		Erysimum perofskianum	G	O	24.4
Vicia villosa	A	R	64.7		Fagopyrum esculentum	G	O	100.0
Vicia villosa	A	O	57.3		Foeniculum vulgare	G	O	28.0
Vigna sesquipedalis	A	O	33.0		Foeniculum vulgare	G	R	57.3
Vigna sesquipedalis	A	R	24.4		Gaultheria hispidula	G	O	44.2
Vigna unguiculata	A	R	20.6		Gaultheria procumbens	G	R	94.8
Vitia spp	A	R	72.6		Glechoma hederacea	G	O	25.5
Vitia spp	A	O	100.0		Glycine max	G	S	100.0
Zea Mays	A	R	99.2		Glycyrrhiza glabra	G	O	24.9
Zea Mays	A	O	100.0		Guizotia abyssinica	G	R	30.3
Abelmochus esculentus	G	R	37.6		Helenium hoopesii	G	0	28.6
Aconitum napellus	G	O	100.0		Helianthus annuus	G	O	33.6
Allium ampeloprasum	G	R	33.4		Helianthus tuberosus	G	O	54.4
Allium ascalonicum	G	R	31.5		Hordeum vulgare	G	O	28.8
Allium cepa	G	O	34.4		Vulgare	G	R	28.1
Allium cepa	G	R	36.4		Hypericum henryi	G	R	80.0
Allium sativum	G	R	53.2		Iberis amara	G	O	44.6
Allium tuberosum	G	R	68.3		Lactuca sativa	G	R	25.3
Althaea officianalis	G	O	47.7		Lathyrus sylvestris	G	O	90.2
Althaea officinalis	G	S	30.7		Lavandula angustifolia	G	R	22.5
Althaea officinalis	G	S	44.3		Lepidium Sativum	G	S	29.5
Althea officinalis	G	R	83.6		Levisticum officinale	G	O	100.0
Anethum graveolens	G	S	44.3		Lolium multiflorum	G	O	24.9
Apium graveolens	G	R	27.7		Lolium multiflorum	G	R	27.1
Armoracia rusticana	G	O	51.8		Lotus corniculatus	G	O	52.2
Armoracia rusticana	G	S	47.1		Lycopersicon esculentum	G	R	24.4

Table I
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Lycopersicon pimpinellifolium	G	R	30.3	Solanum melorgena	G	O	100.0
Malus hupehensis	G	R	65.8	Solanum tuberosum	G	S	46.4
Malva verticillata	G	R	43.1	Sorghum caffrorum	G	R	100.0
Matricaria recutita	G	S	100.0	Sorghum dochna	G	R	51.4
Matteucia pensylvanica	G	R	57.5	Sorghum dochna	G	R	39.6
Melissa officinalis	G	O	28.5	Sorghum sudanense	G	O	97.4
Mentha piperita	G	O	36.0	Stachys byzantina	G	O	41.4
Mentha spicata	G	S	20.3	Stellaria media	G	O	33.8
Mentha spicata	G	S	26.0	Symphytum officinale	G	O	52.0
Mentha suaveolens	G	O	60.5	Tanacetum parthenium	G	O	79.1
Nepeta cataria	G	O	24.1	Tanacetum vulgare	G	O	100.0
Nicotiana rustica	G	R	28.1	Taraxacum officinale	G	S	25.9
Nicotiana tabacum	G	R	40.6	Teucrium chamaedrys	G	O	100.0
Oenothera biennis	G	R	28.4	Teucrium chamaedrys	G	R	48.0
Oenothera biennis	G	O	100.0	arcticus	G	R	73.1
Origanum vulgare	G	S	100.0	Thymus x citriodorus	G	O	52.2
Origanum vulgare	G	O	20.1	Trichosanthes kirilowii	G	O	35.9
Origanum vulgare	G	O	85.4	Trifolium hybridum	G	R	76.0
Oryza Sativa	G	R	53.3	Trifolium incarnatum	G	R	73.4
Panax quinquefolius	G	S	100.0	Trifolium pannonicum	G	R	24.8
Panicum miliaceum	G	S	100.0	Trifolium repens	G	R	48.5
Passiflora caerula	G	O	20.9	Triticosecale spp.	G	R	48.5
Pastinaca sativa	G	R	68.4	Triticum spelta	G	R	22.9
Pastinaca sativa	G	O	100.0	Tropaeolum majus	G	S	23.4
Pennisetum alopecuroides	G	R	100.0	Urtica dioica	G	O	96.4
Petroselinum crispum	G	R	73.0	Vaccinium corymbosum	G	S	60.7
Phalaris canariensis	G	O	100.0	Vaccinium corymbosum	G	R	61.4
Phaseolus coccineus	G	R	29.9	Vaccinum angustifolium	G	R	54.7
Phaseolus coccineus	G	R	67.6	Vicia sativa	G	R	68.8
Phaseolus coccineus	G	O	32.4	Vicia sativa	G	O	31.5
Phaseolus vulgaris	G	R	33.4	Vicia villosa	G	O	100.0
Phaseolus vulgaris	G	R	60.2	Vicia villosa	G	R	35.5
Phaseolus vulgaris	G	R	22.3	Vigna sesquipedalis	G	R	23.0
Phaseolus vulgaris	G	O	87.7	Vitia spp	G	R	36.9
Phlox paniculata	G	O	89.3	Withania somnifera	G	O	44.0
Physalis pruinosa	G	O	37.0	Xanthium strumarium	G	R	37.6
Plantago coronopus	G	R	48.1	Zea mays	G	O	100.0
Plantago major	G	O	47.0	Aconitum napellus	T	R	100.0
Plectranthus sp.	G	O	97.2	Agaricus bisporus	T	R	58.9
Potentilla anserina	G	R	22.0	Agaricus bisporus	T	O	100.0
Prunella vulgaris	G	O	21.2	Allium ampeloprasum	T	R	43.3
Raphanus Raphanistrum	G	O	95.9	Allium ascalonicum	T	R	34.5
Raphanus sativus	G	O	67.7	Allium cepa	T	R	53.5
Reseda odorata	G	O	40.6	Allium cepa	T	O	45.8
Rheum officinale	G	O	82.1	Allium grande	T	R	43.2
Rheum rhabarbarum	G	R	48.1	Allium schoenoprasum	T	R	47.1
Ribes Nigrum	G	R	100.0	Allium tuberosum	T	R	74.6
Ribes Sylvestre	G	O	42.9	Allium tuberosum	T	O	33.6
Ricinus communis	G	O	73.5	Aloe vera	T	R	34.1
Rubus Phoenicalasius	G	R	31.4	Althaea officinalis	T	S	47.8
Ruta graveolens	G	R	100.0	Amelanchier alnitolia	T	R	59.1
Salvia officinalis	G	R	100.0	Ananas comosus	T	O	100.0
Santolina	G	R	28.1	Anthemis nobilis	T	O	22.7
Satureja hortensis	G	R	100.0	Anthriscus cerefolium	T	O	56.8
Satureja repandra	G	O	57.1	Apium graveolens	T	R	29.8
Scrophularia nodosa	G	R	41.6	Aralia nudicaulis	T	O	100.0
Scutelaria lateriflora	G	S	72.1	Armoracia rusticana	T	O	58.9
Sium sisarum	G	O	99.7	Artemisia dracunculus	T	O	100.0
Solanum dulcamara	G	R	65.4	Asparagus officinalis	T	R	25.2
Solanum melanocerasum	G	R	32.4	Atriplex hortensis	T	R	44.7

Table I
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Bellis perennis	T	R	58.1		Laurus nobilis	T	O	70.2
Beta vulgaris	T	R	37.3		Lavandula latifolia	T	O	100.0
Betula glandulosa	T	O	23.5		Culinaris	T	O	70.2
Boletus edulis	T	S	64.2		Lepidium sativum	T	O	100.0
Brassica juncea	T	R	35.6		Levisticum officinale	T	O	100.0
Brassica napus	T	O	100.0		Lolium multiflorum	T	O	35.1
Brassica oleracea	T	R	33.2		Lunaria annua	T	O	100.0
Brassica oleracea	T	O	49.7		pimpinellifolium	T	R	24.4
Camellia sinensis	T	O	24.7		Malus hupehensis	T	R	73.1
Camellia sinensis	T	R	45.7		Malus sp.	T	R	80.9
Canna edulis	T	R	26.2		Malva sylvestris	T	R	34.7
Carum carvi	T	O	100.0		Malva sylvestris	T	O	100.0
Chaerophyllum bulbosum	T	R	40.9		Manihot esculenta	T	R	33.0
Chrysanthemun coronarium (Chp suey)	T	R	48.1		Melissa officinalis	T	O	100.0
Chrysanthenum coronarium	T	R	29.9		Melissa officinalis	T	O	100.0
Chrysanthenum coronarium	T	R	100.0		Mentha suaveolens	T	S	39.7
Cichorium endivia	T	R	20.5		Nigella sativa	T	R	58.9
Cichorium endivia	T	R	21.9		Nigella sativa	T	R	100.0
Cichorium intybus	T	S	50.6		Ocimum Basilicum	T	R	100.0
Cichorium intybus	T	R	31.7		Origanum majorana	T	O	41.5
Cichorium intybus	T	R	52.9		Origanum vulgare	T	O	29.8
Citrullus lanatus	T	O	100.0		Origanum vulgare	T	R	33.1
Citrus paradisi	T	O	40.6		Panax quinquefolius	T	R	75.2
Cocos nucifera	T	O	27.2		Passiflora spp.	T	S	32.0
Cornus canadensis	T	S	44.9		Pastinaca sativa	T	R	20.8
Crithmum maritimum	T	R	32.3		Perroselinum crispum	T	R	55.4
Cucumis anguria	T	O	22.6		Petroselinum crispum	T	R	76.1
Cucurbita moschata	T	O	33.5		Petroselinum crispum	T	O	24.1
Cucurbita moschata (Early Butternut)	T	R	32.3		Peucedanum oreaselinum	T	O	21.0
Cucurbita pepo	T	O	89.0		Phacelia tanacetifolia	T	R	48.6
Cuminum cyminum	T	R	54.3		Phalaris canariensis	T	O	56.4
Curcuma zedoaria	T	S	100.0		Phaseolus coccineus	T	R	22.7
Cymbopogon citratus	T	O	42.6		Phaseolus mungo	T	R	47.4
Datura metel	T	O	24.8		Phaseolus vulgaris	T	R	40.0
Datura metel	T	R	25.5		Phaseolus vulgaris	T	O	29.4
Dioscorea batatas	T	R	100.0		Phoenix dactylifera	T	R	46.3
Dipsacus sativus	T	O	85.0		pourpre	T	R	28.9
Dryopteris filix-mas	T	O	46.4		Phytolacca americana	T	O	100.0
Erigeron canadensis	T	O	100.0		Plectranthus sp.	T	O	73.8
Eruca vesicaria	T	R	30.9		Pleurotus spp.	T	O	100.0
Erysimum perofskianum	T	O	23.0		Poa compressa	T	O	22.3
Eschscholzia californica	T	O	37.8		Poa pratensis	T	O	73.1
Eschscholzia californica	T	R	20.8		Populus Tremula	T	O	100.0
Fagopyrum esculentum	T	O	100.0		Prunella vulgaris	T	O	38.0
Fagopyrum tartaricum	T	R	78.5		Psoralea corylifolia	T	S	96.4
Foeniculum vulgare	T	O	63.4		Pteridium aquilinum	T	R	100.0
Foeniculum vulgare	T	O	27.2		Raphanus raphanistrum	T	O	100.0
Forsythia x intermedia	T	S	32.0		Raphanus sativus	T	R	33.7
Fragaria x ananassa	T	S	33.0		Raphanus sativus	T	R	28.0
Galinsoga ciliata	T	R	25.8		Raphanus sativus	T	O	100.0
Gaultheria procumbens	T	O	46.8		Reseda luteola	T	S	69.6
Hedeoma pulegioides	T	O	73.6		Reseda odorata	T	O	51.8
Helianthus tuberosus	T	O	39.3		Rheum officinale	T	O	46.7
Hordeum vulgare	T	O	32.4		Rheum officinale	T	S	100.0
Humulus lupulus	T	O	21.1		Ribes nigrum	T	R	30.0
Hypericum henryi	T	R	29.3		Ribes Sativum	T	R	61.7
Hypericum perforatum	T	R	42.7		Ribes Sylvestre	T	R	75.4
Iberis amara	T	O	29.5		Ricinus communis	T	S	100.0
Ipomea aquatica	T	R	22.9		Rosmarinus officinalis	T	R	29.0
Lathyrus Sativus	T	R	69.4		Rubus canadensis	T	R	86.1

Table I
MMP-1 Inhibition

Sabal serrulata	T	R	100.0					
Salvia officinalis	T	O	100.0					
Sambucus canadensis	T	O	24.8					
Satureja montana	T	R	100.0					
Satureja repandra	T	S	27.2					
Satureja repandra	T	O	36.4					
Satureja repandra	T	R	42.0					
Scrophularia nodosa	T	R	68.8					
Secale cereale	T	O	100.0					
Setaria italica	T	R	23.2					
Silybum marianum	T	O	73.5					
Solanum melongena	T	R	20.1					
Solanum tuberosum	T	S	24.4					
Solidago virgaurea	T	R	71.4					
Sorghum dochna	T	O	22.5					
Stachys byzantina	T	O	39.2					
Stellaria media	T	O	43.3					
Symphytum officinale	T	O	58.7					
Tanacetum parthenium	T	O	100.0					
Tanacetum vulgare	T	O	32.5					
Taraxacum officinale	T	S	27.8					
Teucrium chamaedrys	T	R	62.9					
Teucrium chamaedrys	T	O	100.0					
Thalpsi arvense	T	O	21.2					
Thymus praecox subsp arcticus	T	R	60.9					
Tragopogon porrifolium	T	R	24.6					
Trifolium incarnatum	T	R	33.7					
Trifolium pannonicum	T	R	72.4					
Trifolium repens	T	R	72.4					
Triticosecale spp.	T	R	33.7					
Tropaeolum majus	T	R	100.0					
Tropaeolum majus	T	O	31.5					
Vaccinium angustifolium	T	O	100.0					
Vaccinium angustifolium	T	S	42.1					
Vaccinium macrocarpon	T	S	30.9					
Vicia villosa	T	R	35.5					
Vigna sesquipedalis	T	R	24.0					
Vigna unguiculata	T	R	31.6					
Vinca minor	T	O	28.7					
Withania somnifera	T	O	26.9					
Xanthium strumarium	T	O	30.9					
Zea mays	T	R	20.1					
Zea mays	T	O	32.2					

MMP-2

Nom latin	Stress	Extrait	Inhibition (%)	Nom latin	Stress	Extrait	Inhibition (%)
Achillea millefolium	A	S	21.9				
Achillea millefolium	A	O	63.0	Capsicum annuum	A	R	100.0
Achillea millefolium	A	R	100.0	Capsicum frutescens	A	S	66.6
Aconitum napellus	A	R	71.0	Capsicum frutescens	A	R	100.0
Alcea rosea	A	R	67.9	Carthamus tinctorius	A	R	21.3
Alchemilla mollis	A	O	64.4	Carthamus tinctorius	A	R	21.5
Allium ascalonicum	A	R	20.9	Chaerophyllum bulbosom	A	R	57.2
Allium cepa	A	R	84.3	Chelidonium majus	A	S	34.4
Allium grande	A	R	36.7	Chenopodium bonus - henricus	A	R	43.5
Allium porrum	A	O	100.0	Chenopodium bonus - henricus	A	O	100.0
Allium porum	A	S	51.9	Chenopodium bonus-henricus	A	R	76.4
Allium porum	A	R	66.7	Chenopodium quinoa	A	O	92.0
Allium sativum	A	R	100.0	Chrysanthemum coronarium	A	R	48.6
Allium schoenoprasum	A	R	73.5	Chrysanthemum coronarium	A	O	49.7
Allium Tuberosum	A	S	24.3	Chrysanthemun coronarium	A	R	47.3
Allium Tuberosum	A	O	83.6	Chrysanthenum coronarium	A	R	26.7
Allium Tuberosum	A	R	89.3	Cicer arietinum	A	S	22.0
Aloe vera	A	R	69.7	Cicer arietinum	A	O	23.6
Althaea officinalis	A	S	27.6	Cichorium intybus	A	S	21.1
Althaea officinalis	A	R	64.7	Cichorium intybus	A	R	100.0
Amaranthus gangeticus	A	S	29.4	Citrullus lanatus	A	S	65.5
Anethum graveolens	A	O	100.0	Citrullus lanatus	A	R	96.3
Apium graveolens	A	S	25.1	Citrullus lanatus	A	O	100.0
Apium graveolens	A	R	52.1	Coix Lacryma-Jobi	A	O	32.2
Aralia cordata	A	S	66.4	Cornus canadensis	A	S	52.8
Aralia cordata	A	R	92.2	Cosmos sulphureus	A	R	72.5
Aralia nudicaulis	A	O	29.4	Crataegus spp	A	O	100.0
Arctium minus	A	S	28.4	Cryptotaenia canadensis	A	R	50.6
Armoracia rusticana	A	S	20.2	Cryptotaenia canadensis	A	O	51.3
Armoracia rusticana	A	O	55.0	Cucumis anguria	A	S	53.4
Arrhenatherum elatius	A	S	40.2	Cucumis Anguria	A	R	84.9
Artemisia dracunculus	A	S	39.7	Cucumis melo	A	R	91.7
Asparagus officinalis	A	S	29.3	Cucurbita Maxima	A	S	34.9
Atriplex hortensis	A	R	33.6	Cucurbita Maxima	A	R	41.7
Avena sativa	A	R	37.2	Cucurbita moschata	A	R	36.8
Beta vulgaris	A	S	45.4	Cucurbita moschata	A	S	37.4
Beta vulgaris	A	R	95.9	Cucurbita pepo	A	S	48.1
Beta vulgaris spp. Maritima	A	R	100.0	Cucurbita pepo	A	R	85.7
Brassica chinensis	A	R	49.6	Curcuma zedoaria	A	S	21.0
Brassica napus	A	O	28.5	Curcuma zedoaria	A	R	32.1
Brassica Napus	A	S	52.4	Curcurbita maxima	A	S	27.0
Brassica Napus	A	R	82.4	Cymbopogon citratus	A	R	34.5
Brassica nigra	A	O	29.2	Cymbopogon citratus	A	O	100.0
Brassica oleracea	A	R	31.2	Cymbopogon martinii	A	S	47.4
Brassica Oleracea	A	R	31.4	Dactylis glomerata	A	S	20.6
Brassica oleracea	A	R	64.0	Dactylis glomerata	A	O	75.0
Brassica oleracea	A	S	68.7	Daucus carota	A	S	44.5
Brassica oleracea	A	R	75.3	Daucus carota	A	R	70.5
Brassica oleracea	A	O	100.0	Dipsacus sativus	A	O	40.4
Brassica rapa	A	S	27.6	Dirca palustris	A	S	27.2
Brassica rapa	A	R	33.4	Dolichos Lablab	A	S	54.2
Brassica rapa	A	O	57.6	Dryopteris filix-mas	A	R	76.3
Brassica rapa	A	R	58.1	Echinacea purpurea	A	R	42.9
Brassica rapa	A	R	84.5	Eleusine coracana	A	S	37.5
Calamintha nepeta	A	O	65.0	Eleusine coracana	A	O	100.0
Camellia sinensis	A	S	21.9	Erigeron canadensis	A	O	45.7
Camellia sinensis	A	R	26.5	Eruca vesicaria	A	R	80.2
Camellia sinensis	A	O	79.0	Eschscholzia californica	A	S	42.4

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Cana edulis	A	R	45.5		Eschscholzia californica	A	O	75.0
Canna edulis	A	S	20.2		Eschscholzia californica	A	R	88.8
Capsella bursa-pastoris	A	S	35.5		Fagopyrum esculentum	A	O	100.0
capsicum annuum	A	S	61.5		Fagopyrum tartaricum	A	R	38.6
Capsicum annuum	A	O	89.8		Fagopyrum tartaricum	A	S	40.3
Fagopyrum tartaricum	A	O	71.0		Nicotiana tabacum	A	S	42.5
Filipendula rubra	A	R	36.3		Nicotiana tabacum	A	R	61.1
Foeniculum vulgare	A	R	41.6		Nigella sativa	A	R	81.7
Foeniculum vulgare	A	S	84.4		Ocimum tenuiflorum	A	R	23.1
Foeniculum vulgare	A	O	100.0		Oenothera biennis	A	R	28.6
Forsythia intermedia	A	R	35.8		Origanum majorana	A	O	52.9
Fragaria x ananassa	A	R	97.2		Origanum majorana	A	R	100.0
Galinsoga ciliata	A	R	54.0		Origanum vulgare	A	O	66.8
Galium odoratum	A	O	34.3		Panax quinquefolius	A	S	31.8
Galium odoratum	A	O	100.0		Pastinaca sativa	A	S	27.7
Gaultheria hispidula	A	S	35.8		Pastinaca sativa	A	R	33.8
Gaultheria hispidula	A	R	100.0		Petasites japonicus	A	S	26.2
Glaux maritima	A	R	46.5		Petroselinum crispum	A	R	69.1
Glycine max	A	S	27.0		Phalaris canariensis	A	S	28.4
Glycine Max	A	R	43.1		Phalaris canariensis	A	R	29.7
Glycine max	A	O	100.0		Phalaris canariensis	A	O	94.3
Guizotia abyssinica	A	S	29.8		Phaseolus coccineus	A	S	30.8
Guizotia abyssinica	A	R	32.5		Phaseolus coccineus	A	R	79.5
Hamamelis virginiana	A	R	75.7		Phaseolus coccineus	A	O	80.9
Helianthus annuus	A	R	69.0		Phaseolus mungo	A	R	59.8
Helianthus Tuberosus	A	R	22.2		Phaseolus vulgaris	A	S	47.3
Helianthus tuberosus	A	R	69.7		Phaseolus Vulgaris	A	R	74.4
Helianthus Tuberosus	A	O	100.0		Phaseolus vulgaris	A	R	83.2
Hordeum hexastichon	A	R	22.3		Phaseolus Vulgaris	A	O	100.0
Hordeum hexastichon	A	R	34.9		Phlox paniculata	A	O	23.7
Hordeum hexastichon	A	O	86.9		Phlox paniculata	A	R	81.7
Hordeum vulgare	A	O	74.8		Physalis alkekengi	A	R	23.5
Hordeum vulgare subsp. Vulgare	A	S	34.5		Physalis Ixocarpa	A	O	85.8
Hordeum vulgare subsp. Vulgare	A	O	74.2		Physalis ixocarpa	A	R	91.5
Hyssopus officinalis	A	O	57.5		Physalis Pruinosa	A	R	25.7
Inula helenium	A	S	26.8		Physalis Pruinosa	A	O	83.5
Ipomoea Batatas	A	S	20.1		Phytolacca decandra	A	O	31.5
Lathyrus sativus	A	S	28.7		Phytolacca decandra	A	S	38.5
Lathyrus sativus	A	0	100.0		Pimpinella anisum	A	S	100.0
Lathyrus sylvestris	A	R	42.4		Pimpinella anisum	A	R	100.0
Lavandula latifolia	A	O	39.1		Plantago coronopus	A	R	36.0
Lepidium sativum	A	O	20.1		Plantago coronopus	A	R	38.4
Lepidium sativum	A	S	49.0		Plantago coronopus	A	O	53.6
Levisticum officinale	A	S	23.0		Plantago major	A	R	65.3
Levisticum officinale	A	O	29.8		Plectranthus sp.	A	O	74.2
Linum usitatissimum	A	R	56.9		Poa compressa	A	S	37.3
Lolium multiflorum	A	S	41.5		Poa compressa	A	R	49.8
Lolium multiflorum	A	O	92.3		Poa compressa	A	O	100.0
Lotus corniculatus	A	O	95.5		Polygonum pensylvanicum	A	R	63.5
Lotus tetragonolobus	A	R	76.7		Polygonum pensylvanicum	A	O	72.9
Lycopersicon esculentum	A	S	35.3		Polygonum persicaria	A	S	27.5
Lycopersicon esculentum	A	R	78.1		Polygonum persicaria	A	O	43.0
Lycopersicon esculentum	A	R	85.6		Poterium sanguisorba	A	R	100.0
Lycopersicon pimpinellifolium	A	R	74.9		Poterium Sanquisorba	A	O	84.2
Malva moschata	A	S	21.5		Pteridium aquilinum	A	O	45.1
Malva moschata	A	O	44.5		Pteridium aquilinum	A	R	100.0
Malva verticillata	A	R	22.0		Pysalis ixocarpa	A	R	87.3
Matricaria recutita	A	S	40.9		Raphanus raphanistrum	A	S	32.2
Matricaria recutita	A	O	67.3		Raphanus sativus	A	R	25.3
Melaleuca alternifolia	A	O	65.0		Raphanus sativus	A	S	47.5

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Melilotus albus	A	S	50.7		Raphanus sativus	A	R	83.5
Melilotus albus	A	O	100.0		Raphanus sativus	A	R	84.7
Melissa officinalis	A	O	42.4		Raphanus Sativus	A	O	100.0
Mentha pulegium	A	O	88.3		Rheum officinale	A	O	44.0
Mentha spicata	A	O	94.8		Ribes nigrum	A	O	100.0
Mentha suaveolens	A	O	82.9		Ribes nigrum	A	R	100.0
Nepeta cataria	A	O	100.0		Ricinus communis	A	O	100.0
Nicotiana rustica	A	S	24.0		Rosa rugosa	A	R	25.2
Nicotiana rustica	A	R	100.0		Rosa rugosa	A	S	26.6
Rosa rugosa	A	O	83.2		Triticum spelta	A	R	26.4
Rosmarinus officinalis	A	R	68.2		Triticum spelta	A	S	36.7
Rubus idaeus	A	O	81.9		Triticum spelta	A	O	51.9
Rubus ideaus	A	R	73.4		Tropaeolum majus	A	R	25.8
Rumex Acetosa	A	S	24.2		Urtica dioica	A	O	22.9
Rumex Acetosa	A	R	85.5		Urtica dioica	A	S	30.6
Rumex Acetosa	A	O	100.0		Vaccinium Corymbosum	A	R	100.0
Rumex crispus	A	0	46.7		Veratrum viride	A	R	33.2
Rumex crispus	A	R	100.0		Verbascum thapsus	A	S	22.9
Ruta graveolens	A	O	100.0		Veronica beccabunga	A	R	52.8
Saccharum officinarum	A	R	80.8		Veronica officinalis	A	R	84.2
Salix purpurea	A	S	56.7		Vicia sativa	A	R	100.0
Salvia officinalis	A	S	24.1		Vicia villosa	A	S	32.9
Salvia officinalis	A	O	91.8		Vicia villosa	A	R	100.0
Salvia sclarea	A	O	99.7		Vigna angularis	A	R	54.0
Santolina chamaecyparissus	A	O	83.8		Vigna sesquipedalis	A	S	48.3
Satureja hortensis	A	O	79.1		Vigna sesquipedalis	A	R	73.0
Satureja hortensis	A	R	100.0		Vigna sesquipedalis	A	O	96.6
Satureja montana	A	R	60.4		Vigna unguiculata	A	R	70.7
Satureja montana	A	O	76.1		Vinca minor	A	S	22.1
Scorzonera hispanica	A	S	22.1		Vinca minor	A	R	88.4
Secale cereale	A	R	47.2		Vitis sp.	A	S	20.9
Secale cereale	A	O	67.2		Vitis sp.	A	R	30.4
Senecio vulgaris	A	S	23.2		Xanthium sibiricum	A	S	39.2
Senecio vulgaris	A	R	76.6		Xanthium sibiricum	A	R	47.8
Sesamum indicum	A	R	100.0		Xanthium sibiricum	A	O	70.1
Sesamum indicum	A	S	100.0		Zea mays	A	R	100.0
Solanum dulcamara	A	R	54.5		Zea Mays	A	O	100.0
Solanum melanocerasum	A	S	45.4		Abelmochus esculentus	G	S	21.6
Solanum melanocerasum	A	R	85.2		Abelmochus esculentus	G	R	79.3
Solanum melanocerasum	A	O	88.7		Achillea millefolium	G	O	62.7
Solanum melongena	A	S	42.5		Aconitum napellus	G	O	82.0
Solanum melongena	A	R	85.9		Acorus calamus	G	S	100.0
Sonchus oleraceus	A	R	25.6		Ageratum conyzoides	G	S	49.3
Sorghum caffrorum	A	R	39.6		Alcea rosea	G	R	64.4
Sorghum dochna	A	S	30.0		Alchemilla mollis	G	S	21.5
Sorghum dochna	A	R	48.0		Alchemilla mollis	G	R	30.2
Sorghum dochna	A	O	62.0		Alchemilla mollis	G	O	55.7
Sorghum durra	A	R	72.1		Allium ampeloprasum	G	O	36.1
Sorghum durra	A	O	94.6		Allium ampeloprasum	G	R	52.8
Sorghum sudanense	A	O	100.0		Allium ascalonicum	G	O	68.9
Spinacia oleracea	A	S	23.6		Allium cepa	G	S	40.2
Stachys affinis	A	R	74.4		Allium cepa	G	R	66.4
Stachys byzantina	A	R	48.4		Allium cepa	G	O	100.0
Stachys byzantina	A	O	100.0		Allium grande	G	R	36.4
Stellaria graminea	A	S	20.8		Allium sativum	G	S	29.5
Stellaria graminea	A	R	37.5		Allium sativum	G	R	68.4
Stellaria media	A	R	49.0		Allium sativum	G	O	100.0
Stellaria media	A	S	50.7		Allium schoenoprasum	G	S	47.1
Symphytum officinale	A	R	44.2		Allium schoenoprasum	G	R	61.7
Tanacetum cinerariifolium	A	R	100.0		Allium tuberosum	G	S	23.8

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Tanacetum parthenium	A	S	30.4		Allium tuberosum	G	O	54.5
Tanacetum vulgare	A	S	28.6		Allium tuberosum	G	R	85.9
Tanacetum vulgare	A	R	100.0		Aloe vera	G	R	53.6
Taraxacum officinale	A	R	59.1		Althaea officinalis	G	S	37.4
Thymus praecox subsp arcticus	A	R	43.5		Altheaa officinalis	G	S	42.4
Thymus vulgaris	A	S	30.1		Amaranthus caudathus	G	S	30.9
Thymus x citriodorus	A	R	100.0		Amaranthus caudathus	G	O	56.7
Trichosanthes kirilowii	A	S	29.2		Amaranthus gangeticus	G	S	23.1
Trichosanthes kirilowii	A	O	42.1		Anethum graveolens	G	S	23.9
Trigonella foenumgraecum	A	O	53.4		Angelica archangelica	G	S	22.0
Triticosecal spp.	A	R	44.8		Angelica archangelica	G	S	24.9
Triticum aestivum	A	R	65.5		Apium graveolens	G	O	33.0
Triticum durum	A	O	53.9		Apium graveolens	G	R	44.8
Apium graveolens	G	S	54.1		Cosmos sulphureus	G	S	79.4
Apium graveolens	G	R	84.1		Cucumis sativus	G	S	39.9
Aralia nudicaulis	G	R	51.8		Cucumis sativus	G	S	39.9
Arctium minus	G	S	25.4		Cucurbita maxima	G	S	33.9
Armoracia rusticana	G	O	52.1		Cucurbita maxima	G	R	43.4
Aronia melanocarpa	G	S	22.5		Cucurbita maxima	G	O	100.0
Aronia melanocarpa	G	R	82.3		Cucurbita moschata	G	S	41.3
Artemisia dracunculus	G	R	53.6		Cucurbita pepo	G	S	42.8
Artemisia dracunculus	G	R	58.8		Cucurbita pepo	G	S	45.4
Artemisia dracunculus	G	S	100.0		Cucurbita Pepo	G	R	83.0
Artemisia dracunculus	G	O	100.0		Cuminum cyminum	G	O	66.2
Asclepias incarnata	G	S	26.9		Curcuma zedoaria	G	R	33.9
Asparagus officinalis	G	S	24.0		Cymbopogon citratus	G	R	65.8
Asparagus officinalis	G	R	65.9		Cymbopogon martinii motia	G	S	41.4
Asparagus officinalis	G	O	95.0		Cymbopogon martinii motia	G	O	60.5
Aster spp	G	O	48.4		Dactylis glomerata	G	S	21.9
Beckmannia eruciformis	G	O	24.8		Dactylis glomerata	G	O	61.2
Bellis perennis	G	O	52.6		Datura stramonium	G	S	27.0
Beta vulgaris	G	S	45.3		Daucus carota	G	O	21.3
Beta vulgaris	G	R	100.0		Daucus carota	G	S	31.0
Beta vulgaris spp. Maritima	G	R	100.0		Daucus carota	G	R	100.0
Brassica cepticepa	G	R	52.9		Digitalis purpurea	G	S	30.9
Brassica chinensis	G	R	41.9		Dipsacus sativus	G	O	63.6
Brassica juncea	G	R	22.8		Dirca palustris	G	O	23.1
Brassica Napus	G	S	22.9		Dolichos Lablab	G	S	33.0
Brassica oleracea	G	R	45.5		Dryopteris filix-mas	G	R	100.0
Brassica oleracea	G	R	47.1		Echinacea purpurea	G	R	93.4
Brassica oleracea	G	S	62.9		Eleusine coracana	G	S	30.0
Brassica oleracea	G	R	77.9		Erigeron speciosus	G	S	28.9
Brassica oleracea	G	O	100.0		Errhenatherum elatius	G	S	55.6
Brassica rapa	G	S	26.5		Eruca vesicaria	G	R	54.7
Brassica rapa	G	R	38.9		Eschscholzia californica	G	S	47.9
Brassica Rapa	G	R	53.6		Eschscholzia californica	G	O	75.9
Calamintha nepeta	G	S	20.4		Fagopyrum tartaricum	G	O	41.1
Calamintha nepeta	G	O	78.0		Filipendula rubra	G	R	38.5
Camellia sinensis	G	O	100.0		Foeniculum vulgare	G	R	70.0
Campanula rapunculus	G	R	60.6		Foeniculum Vulgare	G	S	100.0
Canna edulis	G	O	78.1		Galinsoga ciliata	G	S	34.6
Capsella bursa-pastoris	G	S	30.7		Galinsoga ciliata	G	R	48.2
Capsella bursa-pastoris	G	R	60.6		Gaultheria hispidula	G	R	60.5
Capsicum annuum	G	S	70.8		Gaultheria hispidula	G	0	100.0
Capsicum annuum	G	O	80.0		Gaultheria hispidula	G	S	100.0
Capsicum annuum	G	R	100.0		Glaux maritima	G	R	59.3
Capsicum frutescens	G	S	63.2		Glycine max	G	R	21.1
Capsicum frutescens	G	R	100.0		Glycine max	G	S	24.4
Carthamus tinctorius	G	R	100.0		Glycine max	G	O	28.1
Centaurea solstitialis	G	S	46.4		Guizotia abyssinica	G	S	26.0

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Cerastium tomentosum	G	R	52.3		Guizotia abyssinica	G	R	36.8
Chenopodium bonus-henricus	G	S	22.0		Guizotia abyssinica	G	O	100.0
Chenopodium quinoa	G	S	31.0		Hedeoma pulegioides	G	O	94.6
Chenopodium quinoa	G	O	53.4		Helianthus annuus	G	S	35.5
Chrysanthemun coronarium	G	R	76.2		Helianthus annuus	G	O	75.0
Chrysanthemum coronarium	G	R	54.2		Helianthus annuus	G	R	79.9
Cicer arietinum	G	S	23.1		Helianthus strumosus	G	O	100.0
Cichorium endivia subsp endivia	G	S	28.7		Helianthus tuberosus	G	R	64.2
Cichorium endivia subsp endivia	G	O	68.7		Helichrysum thianschanicum	G	O	61.1
Cichorium intybus	G	S	41.4		Helleborus niger	G	R	48.0
Cichorium intybus	G	O	62.1		Hordeum hexastichon	G	S	26.8
Circium arvense	G	S	25.3		Hordeum vulgare	G	O	65.4
Circium arvense	G	R	59.3		Hordeum vulgare subsp. Vulgare	G	O	75.8
Citrullus lanatus	G	S	24.8		Humulus lupulus	G	S	26.0
Citrullus lanatus	G	R	41.1		Hypericum henryi	G	R	20.2
Citrullus lanatus	G	R	100.0		Hypericum henryi	G	O	71.1
Cosmos sulphureus	G	R	77.9		Hyssopus officinalis	G	O	100.0
Iberis amara	G	S	21.2		Pastinaca sativa	G	S	24.3
Inula helenium	G	S	24.3		Pastinaca sativa	G	R	90.2
Lactuca sativa	G	R	100.0		Petroselinum crispum	G	R	87.6
Lactuca serriola	G	R	69.3		Petroselinum crispum	G	O	100.0
Laportea canadensis	G	R	100.0		Phalaris canariensis	G	R	100.0
Lathyrus sylvestris	G	O	39.6		Phalaris canariensis	G	O	100.0
Lavandula angustifolia	G	O	70.0		Phaseolus acutifolius	G	R	79.6
Lavandula latifolia	G	S	22.7		Phaseolus coccineus	G	S	28.3
Lepidium Sativum	G	R	30.6		Phaseolus coccineus	G	R	80.4
Lepidium sativum	G	S	53.3		Phaseolus mungo	G	R	37.2
Levisticum officinale	G	O	80.7		Phaseolus vulgaris	G	R	54.3
Lolium multiflorum	G	O	34.5		Phaseolus vulgaris	G	S	59.0
Lotus corniculatus	G	S	32.9		Phaseolus vulgaris	G	O	73.7
Lotus corniculatus	G	O	100.0		Phaseolus vulgaris	G	R	100.0
Lotus tetragonolobus	G	R	79.9		Phlox paniculata	G	R	37.7
Lycopersicon esculentum	G	S	28.2		Phlox paniculata	G	O	77.0
Lycopersicon esculentum	G	R	75.4		Phlox paniculata	G	R	80.8
Lycopersicon pimpinellifolium	G	R	81.4		Physalis ixocarpa	G	S	30.5
Malus hupehensis	G	R	32.5		Physalis ixocarpa	G	R	78.3
Malus hupehensis	G	S	41.2		Physalis ixocarpa	G	R	80.9
Malva moschata	G	O	47.1		Physalis pruinosa	G	O	63.2
Malva sylvestris	G	S	23.1		Phytolacca americana	G	S	36.1
Malva verticillata	G	R	39.9		Phytolacca americana	G	O	100.0
Matricaria recutita	G	O	30.0		Pimpinella anisum	G	S	26.1
Matricaria recutita	G	S	71.3		Pimpinella anisum	G	R	30.0
Melaleuca alternifolia	G	O	58.3		Pisum sativum	G	S	28.4
Melilotus alba	G	S	41.1		Plantago coronopus	G	R	27.8
Melilotus albus	G	0	88.8		Plantago coronopus	G	O	51.1
Melilotus albus	G	R	100.0		Plantago coronopus	G	R	67.5
Melissa officinalis	G	O	47.8		Plantago major	G	S	30.3
Mentha arvensis	G	R	33.9		Plantago major	G	O	64.6
Mentha arvensis	G	O	63.3		Poa compressa	G	O	63.0
Mentha piperita	G	S	32.3		Poa compressa	G	S	67.4
Mentha piperita	G	O	85.9		Poa compressa	G	R	89.0
Mentha piperita	G	R	100.0		Poa pratensis	G	S	28.2
Mentha spicata	G	S	28.9		Polygonum aviculare	G	R	100.0
Mentha spicata	G	R	37.5		Polygonum pensylvanicum	G	S	27.7
Mentha suaveolens	G	R	25.6		Polygonum pensylvanicum	G	O	54.1
Mentha suaveolens	G	O	70.3		Polygonum persicaria	G	S	32.0
Momordica charantia	G	R	52.9		Polygonum persicaria	G	O	35.7
Monarda didyma	G	S	22.0		Polygonum persicaria	G	R	100.0
Monarda didyma	G	O	100.0		Portulaca oleracera	G	R	51.5
Monarda fistulosa	G	O	26.0		Poterium sanguisorba	G	O	89.9

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Nepeta cataria	G	S	23.4		*Poterium sanguisorba*	G	R	100.0
Nicotiana tabacum	G	S	45.2		Poterium sanquisorba	G	S	23.7
Nigella sativa	G	R	94.7		Prunella vulgaris	G	S	26.7
Ocimum basilicum	G	S	23.0		Prunus cerasifera	G	R	95.3
Ocimum basilicum	G	O	100.0		Raphanus Raphanistrum	G	R	41.7
Ocimum tenuiflorum	G	R	45.3		Raphanus Raphanistrum	G	S	43.5
Oerothera biennis	G	R	54.3		Raphanus sativus	G	R	41.0
Origanum majorana	G	O	100.0		Raphanus sativus	G	S	44.6
Origanum majorana	G	R	100.0		Raphanus sativus	G	R	50.5
Origanum vulgare	G	R	93.3		Raphanus sativus	G	R	86.1
Origanum vulgare	G	O	93.5		Raphanus sativus	G	O	100.0
Origanum vulgare	G	S	97.4		Reseda odorata	G	O	58.3
Oxalis Deppei	G	S	28.7		Rheum officinale	G	O	30.7
Oxalis Deppei	G	R	87.2		Ribes nigrum	G	O	54.3
Oxalis Deppei	G	O	100.0		Ribes nigrum	G	R	63.8
Oxyria digyna	G	R	54.5		*Ribes Sylvestre*	G	R	100.0
Panicum miliaceum	G	0	71.1		Ricinus communis	G	R	41.5
Panicum miliaceum	G	R	100.0		Ricinus communis	G	O	100.0
Panicum miliaceum	G	S	100.0		Rosmarinus officinalis	G	R	90.0
Passiflora caerula	G	S	26.3		Rubus idaeus	G	S	37.1
Passiflora caerula	G	R	72.1		Rubus ideaus	G	R	26.6
Rubus occidentalis	G	R	35.1		Thymus vulgaris	G	S	23.3
Rumex crispus	G	R	30.3		Thymus vulgaris	G	R	86.4
Rumex crispus	G	S	100.0		Thymus x citriodorus	G	R	97.6
Rumex patientia	G	R	41.0		Tragopogon porrifolius	G	R	76.2
Rumex patientia	G	S	41.9		*Trichosanthes kirilowii*	G	O	87.7
Ruta graveolens	G	S	47.9		Trigonella foenumgraecum	G	S	31.0
Ruta graveolens	G	R	82.1		Trigonella foenumgraecum	G	O	84.0
Saccharum officinarum	G	R	100.0		Triticosecale spp	G	S	26.5
Salvia elegens	G	O	100.0		Triticosecale spp	G	O	73.5
Salvia officinalis	G	S	35.3		Triticum aestivum	G	R	62.4
Salvia officinalis	G	O	100.0		Triticum durum	G	O	51.9
Salvia officinalis	G	R	100.0		Triticum spelta	G	S	24.5
Sambucus ebulus	G	R	53.9		Triticum spelta	G	O	32.9
Santolina chamaecyparissus	G	S	36.4		Triticum turgidum	G	O	25.1
Santolina chamaecyparissus	G	0	69.5		Tropaeolum majus	G	S	21.3
Santolina chamaecyparissus	G	R	100.0		Tropaeolum majus	G	R	45.6
Saponaria officinalis	G	S	29.8		Urtica dioica	G	S	21.3
Satureja hortensis	G	O	97.4		Urtica dioica	G	O	100.0
Satureja hortensis	G	R	100.0		Valerianella locusta	G	O	32.2
Satureja montana	G	O	59.2		Veratrum viride	G	R	77.7
Satureja repandra	G	S	35.3		Verbascum thapsus	G	S	34.0
Satureja repandra	G	O	66.2		Veronica beccabunga	G	R	44.1
Scorzonera hispanica	G	S	24.5		Veronica officinalis	G	S	38.8
Scrophularia nodosa	G	S	24.5		Veronica officinalis	G	R	87.5
Scrophularia nodosa	G	O	30.0		Viburnum trilobum	G	O	62.6
Scrophularia nodosa	G	R	55.6		Vicia faba	G	S	22.2
Scutellaria lateriflora	G	S	20.3		Vicia sativa	G	0	74.8
Scutellaria lateriflora	G	R	83.1		Vicia sativa	G	R	100.0
Secale cereale	G	O	51.1		Vicia villosa	G	R	100.0
Senecio vulgaris	G	R	42.5		Vigna angularis	G	R	65.2
Sesamum indicum	G	S	34.3		Vigna sesquipedalis	G	S	35.1
Sesamum indicum	G	R	44.5		Vigna sesquipedalis	G	R	73.8
Silene vulgaris	G	S	34.1		Vigna sesquipedalis	G	O	100.0
Sium sisarum	G	O	100.0		Vigna unguiculata	G	S	65.9
Solanum melanocerasum	G	S	40.6		Vigna unguiculata	G	R	84.5
Solanum melanocerasum	G	R	85.4		Vinca minor	G	S	22.1
solanum melongena	G	S	58.2		Vitis sp.	G	R	40.1
solanum melongena	G	O	83.0		Vitis sp.	G	O	74.7
solanum melongena	G	R	85.6		Withania somnifera	G	S	37.3

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Solanum tuberosum	G	O	40.2		Withania somnifera	G	O	91.0
Sonchus oleraceus	G	R	41.1		Xanthium sibiricum	G	S	38.4
Sorghum dochna	G	S	25.0		Xanthium sibiricum	G	O	100.0
Sorghum dochna	G	O	64.3		Xanthium strumarium	G	S	37.7
Sorghum dochna	G	R	100.0		Xanthium strumarium	G	O	39.6
sorghum durra	G	R	60.1		Xanthium strumarium	G	R	40.0
Sorghum durra	G	O	100.0		Zea mays	G	S	43.3
Sorghum sudanense	G	O	98.0		Zea mays	G	O	64.4
Spinacia oleracea	G	S	24.9		Zea mays	G	R	68.3
Spinacia oleracea	G	O	100.0		Perilla frutescens	T	R	100.0
Stachys byzantina	G	R	78.8		Abies lasiocarpa	T	S	20.2
Stellaria graminea	G	S	29.3		Abies lasiocarpa	T	R	59.1
Stellaria media	G	S	33.4		Achillea millefolium	T	O	84.7
Stellaria media	G	R	45.4		Aconitum napellus	T	O	22.0
Symphytum officinale	G	O	57.5		Aconitum napellus	T	R	100.0
Tanacetum cinerariifolium	G	R	100.0		Adiantum pedatum	T	R	100.0
Tanacetum parthenium	G	R	28.2		Agaricus bisporus	T	R	52.1
Tanacetum vulgare	G	S	25.2		Agaricus bisporus	T	R	65.6
Tanacetum vulgare	G	R	39.3		Ageratum conyzoides	T	S	26.7
Tanacetum vulgare	G	O	81.2		Agropyron repens	T	S	30.2
Taraxacum officinale	G	R	51.1		Agrostis Stolonifera	T	O	100.0
Thymus fragantissimus	G	S	29.9		Alcea rosea	T	R	63.7
Thymus fragantissimus	G	O	55.3		Alchemilla mollis	T	R	28.6
Thymus praecox subsp arcticus	G	S	27.7		Allium ampeloprasum	T	R	55.9
Thymus serpyllum	G	R	74.9		Allium ampeloprasum	T	O	60.4
Allium ascalonicum	T	S	20.4		Camellia sinensis	T	R	43.8
Allium ascalonicum	T	O	73.4		Camellia sinensis	T	O	66.2
Allium cepa	T	S	33.8		Canna edulis	T	O	100.0
Allium cepa	T	S	35.6		Cantharellus cibarias	T	S	26.0
Allium cepa	T	R	48.0		Capsicum annuum	T	S	54.6
Allium cepa	T	R	78.6		Capsicum annuum	T	R	100.0
Allium grande	T	R	32.4		Capsicum frutescens	T	S	60.9
Allium schoenoprasum	T	R	67.7		Capsicum frutescens	T	R	100.0
Allium tuberosum	T	S	38.8		Carex morrowii	T	R	24.4
Allium tuberosum	T	O	82.5		Carica papaya	T	S	20.8
Allium tuberosum	T	R	85.2		Carthamus tinctorius	T	R	39.6
Aloe vera	T	R	74.6		Carya cordiformis	T	R	100.0
Althaea officianalis	T	S	37.7		Cerastium tomentosum	T	R	54.8
Althaea officinalis	T	O	55.3		Chaerophyllum bulbosum	T	S	42.2
Althaea officinalis	T	R	72.3		Chaerophyllum bulbosum	T	R	74.3
Amaranthus caudathus	T	O	53.5		Chelidonium majus	T	S	20.3
Amaranthus gangeticus	T	S	28.1		Chenopodium quinoa	T	O	76.0
Ananas comosus	T	R	37.9		Chrysanthemum coronarium	T	S	30.6
Ananas comosus	T	O	100.0		Chrysanthemum parthenium	T	R	57.2
angelica archangelica	T	R	41.3		chrysanthemun coronarium	T	R	56.5
Anthemis nobilis	T	O	100.0		Chrysanthenum coronarium	T	R	81.6
Anthemis nobilis	T	R	100.0		Cicer arietinum	T	O	32.2
Anthriscus cerefolium	T	S	21.9		Cichorium endivia subsp endivia	T	R	27.1
Anthriscus cerefolium	T	O	67.1		Cichorium endivia subsp. Endivia	T	S	26.9
Apium graveolens	T	R	35.5		Cichorium endivia subsp. Endivia	T	O	64.5
Apium graveolens	T	R	52.1		Cichorium intybus	T	S	22.7
Aralia cordata	T	R	100.0		Cichorium intybus	T	R	53.5
Aralia nudicaulis	T	R	31.2		Cimicifuga racemosa	T	S	41.1
Arctium minus	T	S	31.3		Cimicifuga racemosa	T	R	68.4
Arctium minus	T	O	73.7		Circium arvense	T	S	42.5
Armoracia rusticana	T	O	49.9		Circium arvense	T	R	64.5
Arrhenatherum elatius	T	O	100.0		Citrullus lanatus	T	S	72.4
Artemisia dracunlus	T	S	100.0		Citrullus lanatus	T	O	92.2
Asclepias incarnata	T	S	32.3		Citrullus lanatus	T	R	100.0
Asparagus officinalis	T	S	48.2		Citrus limettoides	T	O	77.1

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Atriplex hortensis	T	R	28.4		Citrus limon	T	R	43.6
Avena sativa	T	R	31.3		Citrus paradisi	T	S	21.8
Avena sativa	T	O	70.6		Citrus paradisi	T	R	90.9
Avena sativa	T	R	100.0		Citrus sinensis	T	R	46.7
Averrhoa carambola	T	R	44.0		Colocasia sp	T	R	43.4
Bellis perennis	T	R	82.0		Colocasia sp	T	O	84.3
Beta vulgaris	T	S	33.7		Corchorus olitorius	T	R	22.7
Beta vulgaris	T	R	100.0		Coriandrum sativum	T	S	20.4
Betula glandulosa	T	O	53.5		Cornus canadensis	T	S	66.0
Boletus edulis	T	S	21.8		Cosmos sulphureus	T	R	47.1
Borago officinalis	T	S	42.3		Crataegus submollis	T	S	21.2
Borago officinalis	T	R	78.5		Crataegus submollis	T	O	94.3
Brassica hirta	T	R	53.1		Cucumis anguria	T	S	49.4
Brassica hirta	T	O	68.9		Cucumis anguria	T	R	84.1
Brassica Napus	T	S	45.1		Cucumis melo	T	S	56.6
Brassica Napus	T	R	82.9		Cucumis melo	T	R	92.4
Brassica oleracea	T	R	38.8		Cucumis melo	T	O	100.0
Brassica oleracea	T	R	49.7		Cucumis metuliferus	T	S	29.5
Brassica oleracea	T	O	75.5		Cucumis sativus	T	S	28.3
Brassica oleracea	T	R	77.0		Cucurbita maxima	T	S	26.7
Brassica oleracea	T	S	77.2		Cucurbita maxima	T	O	34.7
Brassica rapa	T	R	25.4		Cucurbita maxima	T	R	62.1
Brassica rapa	T	O	37.9		Cucurbita moschata	T	R	30.7
Brassica rapa	T	S	47.7		Cucurbita moschata	T	S	33.4
Brassica rapa	T	R	64.7		Cucurbita moschata	T	S	48.3
Brassica rapa	T	R	81.8		Cucurbita moschata	T	R	98.8
Calamintha nepeta	T	O	57.6		Cucurbita moschata	T	O	100.0
Calendula officinalis	T	S	32.6		Cucurbita pepo	T	S	45.8
Camellia sinensis	T	S	21.0		Cucurbita pepo	T	R	80.2
Cucurbita pepo	T	O	98.9		Helleborus niger	T	R	23.0
Cuminum cyminum	T	O	54.0		Hibiscus cannabinus	T	R	37.9
Curcuma zedoaria	T	S	100.0		Hordeum vulgare	T	O	75.9
Cymbopogon citratus	T	S	21.0		Hordeum vulgare supsp vulgare	T	S	20.5
Cymbopogon martinii motia	T	S	27.5		Hordeum vulgare supsp vulgare	T	O	62.3
Cynara scolymus	T	S	23.1		Humulus lupulus	T	S	44.7
Cynara scolymus	T	O	83.4		Humulus lupulus	T	O	70.6
Cyperus esculentus	T	R	100.0		Hypericum henryi	T	O	76.8
Dactilis Glomerata	T	S	30.8		Hypericum henryi	T	R	99.8
Dactilis Glomerata	T	O	34.5		Hypericum perforatum	T	R	38.8
Daucus carota	T	S	27.1		Hyssopus officinalis	T	O	100.0
Daucus carota	T	R	56.8		Iberis amara	T	O	100.0
Daucus Carota	T	O	100.0		Juniperus communis	T	S	100.0
Digitalis purpurea	T	S	38.4		Kochia scoparia	T	S	25.2
Dirca palustris	T	S	45.9		Koeleria glauca	T	S	23.1
Dolichos lablab	T	S	46.6		Lactuca sativa	T	R	70.5
Dryopteris filix-mas	T	O	29.5		Lactuca serriola	T	R	34.1
Dryopteris filix-mas	T	R	100.0		Laportea canadensis	T	R	61.3
Echinacea purpurea	T	R	59.3		Lathyrus sylvestris	T	R	48.6
Echinacea purpurea	T	O	87.8		Laurus nobilis	T	O	73.6
Eleusine coracana	T	S	28.6		Lavandula angustifolia	T	R	35.0
Eleusine coracana	T	R	80.0		Lavandula angustifolia	T	O	100.0
Erigeron canadensis	T	O	100.0		Lavandula latifolia	T	O	77.1
Eruca vesicaria	T	R	60.5		Lepidium sativum	T	S	35.2
Erysimum perofskianum	T	S	28.2		Lepidium sativum	T	R	48.1
Erysimum perofskianum	T	R	85.2		Lepidium sativum	T	O	72.9
Eschscholzia californica	T	S	49.9		Levisticum officinale	T	S	38.7
Eschscholzia californica	T	O	74.5		Levisticum officinale	T	O	60.3
Fagopyrum esculentum	T	O	52.9		Linum usitatissimum	T	R	24.7
Fagopyrum tartaricum	T	S	25.6		Lolium multiflorum	T	S	39.8
Fagopyrum tartaricum	T	R	68.4		Lolium multiflorum	T	O	74.1

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Fagopyrum tartaricum	T	O	100.0		Lonicera ramosissima	T	S	34.4
Festuca rubra	T	O	51.6		Lonicera ramosissima	T	O	80.5
Festuca rubra	T	S	56.6		Lonicera syringantha	T	R	58.4
Festuca rubra	T	R	71.7		Lotus corniculatus	T	S	36.0
Foeniculum vulgare	T	S	36.5		Lotus corniculatus	T	O	100.0
Foeniculum vulgare	T	R	41.4		Lotus tetragonolobus	T	R	76.1
Foericulum vulgare	T	0	100.0		Lunaria annua	T	R	47.4
Fortunella spp	T	R	53.9		Lycopersicon esculentum	T	R	69.7
Fragaria xananassa	T	R	28.1		Lycopersicon pimpinellifolium	T	R	58.7
Galinsoga ciliata	T	S	43.2		Malus hupehensis	T	R	53.1
Galinsoga ciliata	T	R	73.3		Malus hupehensis	T	S	100.0
Galium odoratum	T	S	42.0		Malus sp.	T	R	72.6
Galium odoratum	T	O	94.2		Malva moschata	T	O	96.7
Glaux Maritima	T	R	24.8		Malva verticillata	T	R	35.8
Glycine max	T	R	37.2		Manihot esculenta	T	R	53.7
Glycine max	T	O	100.0		Melaleuca alternifolia	T	S	21.5
Glycine max	T	R	100.0		Melaleuca alternifolia	T	O	78.7
Glycine max	T	S	100.0		Melilotus albus	T	R	79.7
Gossypium herbaceum	T	R	48.7		Melilotus officinalis	T	S	34.6
Guizotia abyssinica	T	S	26.8		Melilotus officinalis	T	R	100.0
Guizotia abyssinica	T	R	100.0		Melissa officinalis	T	O	100.0
Hedeoma pulegioides	T	R	20.3		Mentha piperita	T	S	24.5
Hedeoma pulegioides	T	O	72.7		Mentha pulegium	T	O	100.0
Helianthus annuus	T	R	56.1		Mentha suaveolens	T	O	20.9
Helianthus strumosus	T	O	100.0		Miscanthus sinensis Andress	T	S	69.1
Helianthus tuberosus	T	S	25.3		Momordica charantia	T	R	54.9
Helianthus tuberosus	T	R	28.1		Monarda didyma	T	S	31.3
Helianthus tuberosus	T	O	78.6		Monarda fistulosa	T	S	21.3
Helianthus tuberosus	T	R	91.5		Monarda fistulosa	T	O	100.0
Helichrysum angustifolium	T	R	83.4		Montia perfoliata	T	R	67.2
Helichrysum angustifolium	T	S	88.3		Musa paradisiaca	T	R	47.3
Helichrysum thianschanicum	T	O	26.0		nasturtium officinale	T	S	55.7
Heliotropium arborescens	T	R	100.0		Nepeta cataria	T	S	20.7
Nepeta cataria	T	S	69.0		Plantago major	T	S	22.3
Nepeta cataria	T	O	100.0		Plectranthus sp.	T	S	59.2
Nicotiana rustica	T	S	52.8		Pleurotus spp	T	R	26.6
Nicotiana rustica	T	R	88.1		Poa compressa	T	S	33.4
Nicotiana tabacum	T	S	50.3		Poa compressa	T	R	75.7
Nicotiana tabacum	T	R	91.5		Poa compressa	T	O	100.0
Nigella sativa	T	R	34.2		Poa pratensis	T	S	25.4
Nigella sativa	T	R	90.3		Polygonum pensylvanicum	T	O	66.8
Nigella sativa	T	R	100.0		Polygonum pensylvanicum	T	R	73.3
Ocimum Basilicum	T	S	21.6		Polygonum persicaria	T	S	27.1
Ocimum Basilicum	T	O	100.0		Polygonum persicaria	T	O	50.8
Ocimum tenuiflorum	T	R	44.5		Populus incrassata	T	O	74.3
Oenothera biennis	T	R	48.2		Populus incrassata	T	S	100.0
Onobrychis viciifolia	T	S	34.4		Prunus armeniaca	T	R	55.0
Onobrychis viciifolia	T	O	35.6		Prunus cerasus	T	O	100.0
Opuntia sp.	T	S	23.5		Prunus persica	T	S	26.0
Origanum vulgare	T	S	20.7		Prunus persica	T	R	46.2
Origanum vulgare	T	R	76.7		Psoralea corylifolia	T	S	47.4
Origanum vulgare	T	O	100.0		Pteridium aquilinum	T	R	100.0
Oryza sativa	T	R	60.8		Pyrus communis	T	R	42.9
Oxalis Deppei	T	S	22.2		Raphanus raphanistrum	T	S	24.4
Oxalis Deppei	T	R	81.4		Raphanus raphanistrum	T	R	56.9
Passiflora caerulea	T	S	36.9		Raphanus raphanistrum	T	O	62.1
Passiflora caerulea	T	R	87.0		Raphanus raphanistrum	T	O	100.0
Passiflora spp	T	R	54.6		Raphanus sativus	T	R	48.9
Pastinaca sativa	T	S	24.8		Raphanus sativus	T	S	59.8
Pastinaca sativa	T	R	74.7		Raphanus sativus	T	R	81.6

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Perroselinum crispum	T	R	85.2		Reseda odorata	T	O	71.3
Perroselinum crispum	T	O	100.0		Rhamnus frangula	T	O	44.6
Persea americana	T	R	43.1		Rhamnus frangula	T	R	74.4
Petasites Japonicus	T	S	21.9		Rheum officinale	T	O	73.9
Petroselinum crispum	T	R	52.8		Rheum officinale	T	S	100.0
Peucedanum oreaselinum	T	R	41.9		Ricinus communis	T	O	100.0
Phalaris canariensis	T	R	41.1		Rosmarinus officinalis	T	O	100.0
Phalaris canariensis	T	O	100.0		Rosmarinus officinalis	T	R	100.0
Phaseolus acutifolius	T	R	88.2		Rubus ideaus	T	R	78.1
Phaseolus coccineus	T	S	22.2		Rumex acetosella	T	R	42.2
Phaseolus coccineus	T	R	36.4		Rumex crispus	T	0	73.1
Phaseolus coccineus	T	R	86.7		Rumex patientia	T	S	52.0
Phaseolus coccineus	T	O	100.0		Ruta graveolens	T	S	34.7
Phaseolus mungo	T	S	43.0		Ruta graveolens	T	0	100.0
Phaseolus vulgaris	T	S	62.9		Saccharum officinarum	T	S	59.6
Phaseolus vulgaris	T	R	71.9		Saccharum officinarum	T	R	66.1
Phaseolus vulgaris	T	R	73.0		Salvia elegans	T	S	36.3
Phaseolus vulgaris	T	O	100.0		Salvia elegans	T	O	44.3
Phlox paniculata	T	R	23.1		Salvia officinalis	T	S	28.2
Phlox paniculata	T	R	92.8		Salvia officinalis	T	O	100.0
Physalis alkekengi	T	R	39.5		Salvia sclarea	T	R	38.6
Physalis ixocarpa	T	R	36.7		Sambucus canadensis	T	S	36.3
Physalis ixocarpa	T	R	75.9		Sambucus canadensis	T	R	64.5
Physalis pruinosa	T	R	65.6		Sambucus canadensis	T	O	100.0
Physalis pruinosa	T	R	71.0		Sanguisorba minor	T	O	73.1
Physalis pruinosa	T	O	100.0		Sanguisorba minor	T	R	100.0
Physalis pruinosa	T	O	100.0		Santolina chamaecyparissus	T	0	27.7
Phytolacca decandra	T	S	39.3		Santolina chamaecyparissus	T	R	100.0
Phytolacca decandra	T	O	42.0		Saponaria officinalis	T	R	100.0
Pimpinella anisum	T	S	27.9		Satureja hortensis	T	O	62.2
Pimpinella anisum	T	R	35.8		Satureja hortensis	T	R	100.0
Pimpinella anisum	T	O	49.9		Satureja montana	T	S	34.7
Pimpinella anisum	T	R	55.5		Satureja montana	T	O	36.3
Pisum sativum	T	S	22.3		Satureja montana	T	R	100.0
Plantago coronopus	T	R	35.2		Satureja repandra	T	O	47.0
Plantago coronopus	T	R	46.0		Satureja repandra	T	S	47.6
Plantago coronopus	T	O	73.5		Satureja repandra	T	R	84.6
Scolymus hispanicus	T	R	35.8		Typha latifolia	T	S	29.2
Scorzorera hipanica	T	R	99.4		Urtica diolca	T	S	29.5
Scrophularia nodosa	T	S	29.1		Vaccinium angustifolium	T	R	59.4
Scrophularia nodosa	T	R	90.1		Vaccinium angustifolium	T	R	100.0
Scrophularia nodosa	T	O	100.0		Vaccinium macrocarpon	T	S	51.1
Scutellaria lateriflora	T	S	30.9		Vaccinium macrocarpon	T	O	64.7
Scutellaria lateriflora	T	R	63.9		Valerianella locusta	T	S	22.7
Secale cereale	T	O	100.0		Valerianella locusta	T	O	24.8
Senecio vulgaris	T	S	24.7		Veronica beccabunga	T	R	33.3
Senecio vulgaris	T	R	32.2		Veronica officinalis	T	R	59.2
Sesamum indicum	T	R	100.0		Veronica officinalis	T	O	100.0
Silene vulgaris	T	S	25.6		Viburnum trilobum	T	O	71.2
Sium sisarum	T	O	81.4		Vicia faba	T	S	25.5
Sium sisarum	T	O	100.0		Vicia faba	T	R	27.0
Solanum melanocerasum	T	S	28.0		Vicia sativa	T	O	56.6
Solanum melanocerasum	T	R	78.8		Vicia villosa	T	R	100.0
Solanum melanocerasum	T	R	99.6		Vigna angularis	T	R	49.2
Solanum melongena	T	S	70.5		Vigna sesquipedalis	T	R	77.4
Sorghum caffrorum	T	S	28.1		Vigna sesquipedalis	T	O	100.0
Sorghum dochna	T	R	40.6		Vigna unguiculata	T	S	27.2
Sorghum dochna	T	O	100.0		Vigna unguiculata	T	R	59.0
Sorghum durra	T	R	29.7		Vinca minor	T	R	39.2
Sorghum durra	T	O	78.9		Vitis sp.	T	R	31.9

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Sorghum sudanense	T	R	74.6		Vitis sp.	T	S	36.3
Sorghum sudanense	T	O	100.0		Vitis sp.	T	O	72.2
Spinacia oleracea	T	S	28.5		Weigela coraeensis	T	S	32.9
Spinacia oleracea	T	O	62.7		Weigela coraeensis	T	R	61.5
Stachys byzantina	T	R	66.9		Withania somnifera	T	S	36.1
Stachys byzantina	T	O	100.0		Withania somnifera	T	O	83.3
Stellaria media	T	S	21.4		Xanthium sibiricum	T	S	32.1
Stellaria media	T	R	87.1		Xanthium sibiricum	T	R	33.2
Stipa capillata	T	R	37.5		Xanthium sibiricum	T	O	62.4
Symphytum officinale	T	O	58.5		Xanthium strumarium	T	S	47.2
Tanacetum cinerariifolium	T	O	100.0		Xanthium strumarium	T	O	74.3
Tanacetum cinerariifolium	T	R	100.0		Zea mays	T	R	55.7
Tanacetum parthenium	T	R	100.0		Zea mays	T	O	100.0
Tanacetum vulgare	T	R	20.8		Zingiber officinale	T	R	79.0
Taraxacum officinale	T	R	76.3					
Teucrium chamaedrys	T	O	75.6					
Thalpsi arvense	T	O	64.1					
Thymus fragantissimus	T	S	21.4					
Thymus praecox subsp arcticus	T	S	36.4					
Thymus pseudolanuginosus	T	S	21.1					
Thymus pseudolanuginosus	T	O	75.4					
Thymus serpyllum	T	O	64.2					
Thymus vulgaris	T	R	71.5					
Thymus X citriodorus	T	S	27.6					
Tragopogon porrifolium	T	S	44.8					
Tragopogon porrifolius	T	O	39.1					
Tragopogon porrifolius	T	R	57.9					
Tragopogon sp.	T	R	20.0					
Trifolium repens	T	R	79.7					
Trigonella foenum graecum	T	O	28.4					
Trigonella foenum graecum	T	S	34.8					
Triticosecale spp	T	S	28.5					
Triticosecale spp	T	O	100.0					
Triticum aestivum	T	R	32.9					
Triticum aestivum	T	O	67.7					
Triticum durum	T	O	47.7					
Triticum spelta	T	O	37.1					
Triticum turgidumm	T	O	41.2					
Tropaeolum majus	T	S	42.7					
Tropaeolum majus	T	R	77.6					
Tsuga diversifolia	T	R	53.4					

Table 3 1
MMP-3

Nom latin	Stress	Extrait	Inhibition (%)	Nom latin	Stress	Extrait	Inhibition (%)
Achillea millefolium	A	O	21.4	Hypericum perforatum	A	R	31.7
Allium Tuberosum	A	S	32.5	Hyssopus officinalis	A	R	21.6
Anethum graveolens	A	S	26.0	Iris versicolor	A	R	53.6
Anthemis nobilis	A	R	20.3	Isatis tinctoria	A	S	32.9
Anthemis tinctoria	A	R	58.0	Levisticum officinale	A	O	46.7
Apium graveolens	A	R	34.1	Lotus tetragonolobus	A	R	26.2
Arctium minus	A	R	53.9	Matricaria recutita	A	S	43.5
Arctium minus	A	O	100.0	Matteucia pensylvanica	A	R	24.7
Arctostaphylos uva-ursi	A	S	58.6	Melissa officinalis	A	S	30.3
Aronia melanocarpa	A	R	32.2	Mentha suaveolens	A	R	91.7
Artemisia Absinthium	A	O	100.0	Nepeta cataria	A	S	30.3
Artemisia dracunculus	A	R	23.4	Nigella sativa	A	O	26.0
Artemisia dracunculus	A	S	63.0	Ocinum tenuiflorum	A	O	33.0
Aster sp	A	O	42.4	Ocinum tenuiflorum	A	R	49.8
Atropa belladonna	A	O	23.8	Perilla frutescens	A	R	34.8
Beta vulgaris	A	S	24.1	Petasites japonicus	A	R	38.0
Beta vulgaris	A	O	42.9	Phaseolus mungo	A	O	62.6
Beta vulgaris	A	O	94.3	Phaseolus vulgaris	A	S	21.2
Beta vulgaris	A	R	97.9	Phaseolus vulgaris	A	O	50.6
Beta vulgaris var. condivata	A	O	21.2	Phaseolus Vulgaris	A	R	100.0
Brassica napus	A	S	25.0	Phlox paniculata	A	S	46.4
Brassica napus	A	O	100.0	Physalis alkekengi	A	O	37.5
Brassica oleracea	A	S	39.9	Plantago major	A	O	27.3
Canna edulis	A	S	39.6	Polygonum aviculare linné	A	S	24.8
Capsicum annuum	A	S	35.4	Polygonum persicaria	A	S	59.1
Capsicum frutescens	A	S	27.2	Potentilla anserina	A	R	40.1
Cichorium intybus	A	O	20.2	Poterium sanguisorba	A	R	75.7
Cichorium intybus	A	R	26.5	Prunus cerasifera	A	R	80.0
Cichorium intybus	A	S	28.2	Ptaridium aquilinus	A	R	39.6
Citrullus lanatus	A	S	21.7	Raphanus raphanistrum	A	S	28.2
Citrullus lanatus	A	O	27.8	Raphanus sativus	A	S	64.4
Citrullus lanatus	A	R	34.4	Ribes nigrum	A	O	47.6
Coix Lacryma-Jobi	A	S	37.3	ribes uva-crispa	A	R	21.0
Coix Lacryma-Jobi	A	O	78.1	ribes uva-crispa	A	O	100.0
Cosmos sulphureus	A	R	26.8	Rosa rugosa	A	S	21.4
Crataegus submollis	A	S	22.3	Rosmarinus officinalis	A	R	27.3
Crataegus submollis	A	R	61.6	Rubus allegheniensis	A	R	81.0
Cucumis anguria	A	S	27.8	Rubus arcticus	A	R	51.0
Cucurbita Maxima	A	S	28.9	Rubus canadensis	A	R	48.8
Cucurbita moschata	A	S	32.9	Rubus idaeus	A	S	28.5
Cucurbita pepo	A	S	50.9	Rubus idaeus	A	R	35.1
Datisca cannabina	A	R	43.3	Rubus pubescens	A	O	50.4
Datisca cannabina	A	S	100.0	Rubus thibetanus	A	O	39.1
Digitalis purpurea	A	R	20.0	Rumex patientia	A	S	24.8
Dipsacus sativus	A	R	64.8	Ruta graveolens	A	O	56.1
Dirca palustris	A	S	29.6	Salvia officinalis	A	R	43.2
Dryopteris filix-mas	A	R	22.0	Santolina chamaecyparissus	A	R	27.0
Dryopteris filix-mas	A	O	32.8	Scutellaria lateriflora	A	R	53.5
Echinacea purpurea	A	O	100.0	Solanum melongena	A	S	21.8
Fagopyrum tataricum	A	R	28.3	Solidago canadensis	A	S	27.4
Fagopyrum tataricum	A	O	29.7	Stachys affinis	A	S	100.0
Filipendula rubra	A	S	43.7	Stellaria media	A	O	24.4
Filipendula rubra	A	R	63.2	Tanacetum vulgare	A	R	62.1
Fragaria x ananassa	A	R	41.5	Thymus praecox subsp arcticus	A	S	28.4
Fragaria x ananassa	A	S	67.1	Thymus praecox subsp arcticus	A	O	31.8
Fragaria x ananassa	A	O	99.6	Trichosanthes kirilowii	A	S	23.2
Fragariax ananassa	A	R	31.7	Vaccinium Corymbosum	A	R	100.0
Gaultheria hispidula	A	R	50.5	Vaccinium macrocarpon	A	S	48.6
Glycyrrhiza glabra	A	R	56.2	Vaccinum augustifolium	A	R	56.6

Table 3
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Hedeoma pulegioides	A	O	51.7		Vigna angularia	A	O	23.1
Helianthus tuberosus	A	O	22.9		Vigna sesquipedalis	A	O	37.8
Hordeum vulgare subsp vulgare	A	S	36.0		Vigna unguiculata	A	S	52.5
Hypericum henryi	A	R	67.2		Vinca minor	A	O	23.2
Vitis sp.	A	S	20.8		Iris versicolor	G	R	47.0
Vitis sp.	A	O	21.5		Isatis tinctoria	G	S	32.1
Vitis sp.	A	R	33.6		Lavandula angustifolia	G	S	43.9
Xanthium sibiricum	A	S	27.3		Levisticum officinale	G	O	51.4
Aconitum napellus	G	O	59.0		Malus hupehensis	G	S	24.2
Agropyron repens	G	O	69.4		Malus hupehensis	G	R	37.2
Alchemilla mollis	G	S	30.6		Malva sylvestris	G	O	73.7
Alchemilla mollis	G	O	73.3		Matricaria recutita	G	S	31.5
Allium grande	G	O	33.4		Melaleuca alternifolia	G	S	21.5
Anethum graveolens	G	S	40.5		Melissa officinalis	G	S	32.8
Aronia melanocarpa	G	O	100.0		Melissa officinalis	G	R	44.8
Artemisia absinthium	G	S	31.3		Melissa officinalis	G	O	82.4
Artemisia absinthium	G	O	67.9		Mentha piperita	G	R	77.3
Artemisia dracunculus	G	S	100.0		Mentha pulegium	G	R	41.1
Atropa belladonna	G	S	41.2		Monarda didyma	G	S	31.8
Bellis perennis	G	S	48.4		Nepeta cataria	G	R	25.8
Brassica oleracea	G	S	26.4		Nepeta cataria	G	O	84.9
Brassica oleracea	G	O	40.6		Nigella sativa	G	O	44.9
Brassica rapa	G	S	21.4		Ocinum tenuiflorum	G	R	23.7
Capsicum annuum	G	S	35.0		Oenothera biennis	G	S	25.6
Capsicum annuum	G	S	35.7		Origanum vulgare	G	S	28.6
Capsicum frutescens	G	S	27.5		Origanum vulgare	G	R	31.2
Chelidonium majus	G	O	34.7		Pennisetum alopecuroides	G	S	49.9
Cichorium intybus	G	R	34.4		Petroselinum crispum	G	S	31.5
Coix Lacryma-Jobi	G	S	20.2		Peucedanum oreaselinum	G	R	68.3
Cosmos sulphureus	G	O	32.9		Phaseolus acutifolius	G	R	25.4
Crataegus submollis	G	S	25.6		Phaseolus acutifolius	G	O	61.8
Crataegus submollis	G	R	28.6		Phaseolus vulgaris	G	O	24.4
Cucumis anguria	G	S	33.6		Phaseolus vulgaris	G	S	35.6
Cucurbita maxima	G	S	44.6		Phlox paniculata	G	S	27.2
Cucurbita moschata	G	S	33.4		Physalis alkekengi	G	R	26.1
Cucurbita pepo	G	S	25.3		Physalis alkekengi	G	O	54.9
Cymbopogon citratus	G	S	30.3		Plantago major	G	O	55.9
Cymbopogon martinii	G	S	61.1		Plectranthus sp.	G	R	23.0
Daucus carota	G	O	30.0		Polygonum persicaria	G	S	41.1
Dryopteris filix-mas	G	S	26.0		Potentilla anserina	G	R	55.4
Dryopteris filix-mas	G	R	45.3		Poterium sanguisorba	G	R	76.4
Echinacea purpurea	G	O	51.8		Prunus cerasifera	G	R	55.3
Echinochloa frumentacea	G	S	30.3		Ptaridium aquilinus	G	R	44.5
Fagopyrum esculentum	G	R	50.9		Rhaphanus sativus	G	O	98.1
Fagopyrum tartaricum	G	O	44.0		Rheum X cultorum	G	R	27.0
Fagopyrum tartaricum	G	R	46.0		Ribes nidigrolaria	G	R	22.0
Filipendula rubra	G	S	53.1		Ribes Silvestris	G	R	88.8
Filipendula rubra	G	R	58.7		Rosmarinus officinalis	G	R	39.4
Forsythia intermedia	G	O	52.9		Rubus idaeus	G	S	100.0
Fragaria x ananassa	G	R	40.7		Rubus ideaus	G	O	37.0
Fragariax ananassa	G	R	28.1		Rubus Phoenicalasius	G	R	24.9
Gaultheria hispidula	G	R	72.8		Rubus pubescens	G	O	23.0
Gaultheria hispidula	G	O	100.0		Rubus thibetanus	G	O	41.2
Gaultheria procumbens	G	R	24.1		Rumex patientia	G	S	36.2
Glycine max	G	S	31.2		Salvia officinalis	G	O	34.5
Glycyrrhiza glabra	G	R	37.1		Salvia officinalis	G	R	89.5
Guizotia abyssinica	G	R	35.4		Sanguisorba officinalis	G	S	46.8
Hamamelis virginiana	G	S	29.1		Santolina chamaecyparissus	G	R	33.7
Hamamelis virginiana	G	R	67.1		Secale cereale	G	S	24.4
Helenium hoopesii	G	R	39.8		Senecio vulgaris	G	R	37.6

Table 3
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3

Helianthus tuberosus	G	O	32.8		Solanum melongena	G	S	21.1
Hordeum hexastichon	G	S	60.9		Solanum tuberosum	G	S	27.6
Humulus lupulus	G	R	61.2		Sorghum dochna	G	S	23.7
Humulus lupulus	G	S	90.5		Sorghum dochna	G	R	56.3
Hypericum henryi	G	R	100.0		Symphytum officinale	G	S	25.2
Hypericum perforatum	G	R	43.4		Teucrium chamaedrys	G	S	75.4
Hyssopus officinalis	G	S	25.1		Thymus praecox subsp arcticus	G	S	28.4
Hyssopus officinalis	G	O	48.2		Thymus praecox subsp arcticus	G	O	52.1
Thymus x citriodorus	G	R	25.3		Carya cordiformis	T	R	27.5
Triticum durum	G	S	21.9		Chaerophyllum bulbosum	T	S	27.1
Triticum turgidum	G	O	80.2		Chaerophyllum bulbosum	T	O	100.0
Vaccinium angustifolium	G	R	47.6		Chelidonium majus	T	O	54.0
Vaccinium angustifolium	G	R	48.1		Chrysanthemum parthenium	T	S	50.4
Vaccinium angustifolium	G	R	71.0		Chrysanthenum coronarium	T	S	25.8
Vaccinium corymbosum	G	R	60.6		Cichorium intybus	T	R	23.9
Vaccinium corymbosum	G	R	61.7		Citrullus lanatus	T	S	33.2
Vaccinium corymbosum	G	O	99.4		Citrullus lanatus (Garden baby)	T	S	21.4
Vaccinium macrocarpon	G	R	100.0		Citrus limettoides	T	O	39.2
Vaccinum angustifolium	G	O	24.4		Citrus limon	T	O	60.4
Vaccinum angustifolium	G	R	41.5		Corchorus olitorius	T	S	28.6
Valeriana officinalis	G	R	33.5		Cornus canadensis L.	T	O	50.0
Veronica officinalis	G	S	27.0		Cornus canadensis L.	T	R	80.6
Vicia faba	G	O	31.2		Cosmos sulphureus	T	R	20.5
Vicia faba	G	R	44.7		Cosmos sulphureus	T	S	27.0
Vigna angularia	G	O	40.8		Crataegus sp	T	S	43.9
Vigna angularis	G	S	39.4		Crataegus submollis	T	O	24.2
Vigna unguiculata	G	O	26.1		Crataegus submollis	T	R	55.1
Vitis sp.	G	R	62.4		Cucumis anguria	T	S	33.2
Vitis sp.	G	S	63.3		Cucumis sativus Fanfare	T	S	35.4
Vitis sp.	G	O	82.0		Cucurbita moschata	T	S	30.4
Withania somnifera	G	S	22.4		Cucurbita pepo	T	R	23.8
Xanthium strumarium	G	S	20.7		Cucurbita pepo	T	S	46.6
Zea mays	G	S	26.1		Cuminum cyminum	T	S	23.1
Zea mays	G	R	67.5		Curcuma zedoaria	T	S	20.8
Abies lasiocarpa	T	R	46.2		Cymbopogon citratus	T	S	39.7
Acorus calamus	T	R	21.8		Dolichus lablab	T	S	25.8
Actinidia arguta	T	R	64.6		Dryopteris filix-mas	T	O	54.0
Agropyron repens	T	O	48.3		Echinacea purpurea	T	S	20.4
Alchemilla mollis	T	R	100.0		Eriobotrya japonica	T	O	34.8
Alchemilla mollis	T	O	100.0		Eriobotrya japonica	T	S	42.9
Allium cepa	T	R	39.8		Foeniculum vulgare	T	O	33.1
Allium cepa	T	O	45.2		Fragaria x ananassa	T	S	20.3
Allium tuberosum	T	R	28.2		Fragaria x ananassa	T	R	42.8
Allium tuberosum	T	S	28.8		Glycine max	T	O	26.3
Alpinia officinarum	T	S	26.4		Glycine max	T	O	30.5
Amelanchier alnifolia	T	R	78.3		Gossypium herbaceum	T	R	22.5
Amelanchier sanguinea x A. laevis	T	R	66.5		Guizotia abyssinica	T	R	46.6
angelica archangelica	T	S	25.2		Hamamelis virginiana	T	S	33.1
Apium graveolens	T	R	43.3		Hamamelis virginiana	T	S	33.1
Aralia cordata	T	S	31.5		Hamamelis virginiana	T	R	44.8
Aralia nudicaulis	T	S	37.7		Hedeoma pulegiodes	T	O	46.8
Aralia nudicaulis	T	R	48.5		Helenium hoopesii	T	R	27.9
Aronia melanocarpa	T	S	26.0		Helianthus annus	T	S	22.7
Aronia melanocarpa	T	O	53.3		Helianthus strumosus	T	O	30.0
Aronia prunifolia	T	R	79.2		Heliotropium arborescens	T	O	53.7
Artemisia absinthium	T	O	100.0		Helleborus niger	T	S	40.5
Artemisia dracunlus	T	S	42.0		Hibiscus cannabinus	T	O	34.0
Ayperus esculentus	T	O	67.8		Hordeum vulgare subsp. Vulgare	T	O	100.0
Beta vulgaris	T	R	27.9		Humulus lupulus	T	S	24.9
Beta vulgaris	T	S	33.2		Humulus lupulus	T	R	55.1

Table 3
MMP-3

Beta vulgaris	T	O	53.0		Humulus lupulus	T	R	77.6
Borago officinalis	T	O	55.7		Humulus lupulus	T	S	79.1
Brassica Napus	T	O	71.9		Humulus lupulus	T	S	100.0
Brassica oleracea	T	O	37.0		Humulus lupulus	T	R	100.0
Brassica oleracea	T	S	46.9		Humulus lupulus	T	S	100.0
Brassica rapa	T	S	36.7		Hypericum henryi	T	R	100.0
Bromus inermis	T	R	42.8		Hypericum perforatum	T	O	99.3
Calendula officinalis L.	T	S	28.4		Hypomyces lactiflorum	T	O	20.5
Camellia sinensis syn. Thea sinensis	T	R	86.4		Iris versicolor	T	R	48.5
Capsicum annus	T	S	29.7		Juniperus communis	T	R	33.8
Capsicum annus	T	R	43.7		Lactuca serriola	T	R	21.5
Capsicum frutescens (tabasco)	T	S	22.0		Laportea canadensis	T	S	37.7
Lavendula angustifolia	T	S	91.7		Rosmarinum officinalis	T	R	48.2
Lepidium sativum	T	R	24.7		Rubus arcticus	T	R	59.1
Levisticum officinale	T	O	24.9		Rubus ideaus	T	O	21.5
Lolium perenne	T	S	22.3		Rubus pubescens	T	O	51.8
Lonicera ramosissima	T	R	42.5		Rubus thibetanus	T	O	33.7
Lonicera syringantha	T	R	21.1		Rumex patientia	T	S	34.4
Malus	T	O	53.1		Ruta graveolens	T	O	24.3
Malus hupehensis (Pamp.) Rehd.	T	R	76.5		Salvia (elegens)	T	O	37.2
Malus sp.	T	R	39.8		Salvia (elegens)	T	R	42.9
Malus sp.	T	R	45.7		Salvia officinalis	T	R	67.3
Malva moschata	T	S	22.8		Sambucus canadensis	T	S	30.2
Malva sylvestris	T	O	57.6		Sanguisorba minor	T	R	21.0
Matteucia pensylvanica	T	R	20.1		Sanguisorba minor	T	R	29.9
Melissa officinalis	T	O	55.0		Sanguisorba minor	T	R	30.8
Mentha piperita	T	R	35.5		Sanguisorba minor	T	R	44.5
Mentha piperita	T	O	43.9		Santolina	T	R	43.8
Mentha piperita	T	R	56.6		Sarratula tinctoria	T	S	37.7
Mentha pulegium	T	O	33.3		Satureja montana	T	R	45.0
Mentha pulegium	T	R	56.2		Satureja repandra	T	S	46.3
Mentha spicata	T	O	43.4		Scorzorera hipanica	T	R	25.7
Mentha spicata	T	O	58.0		Scuttellaria lateriflora	T	S	41.2
Nicotiana tabacum	T	R	27.3		Setaria italica	T	S	33.4
Nigella sativa	T	R	25.1		Solidago canadensis	T	S	78.5
Ocimum Basilicum	T	R	20.2		Stachys affinis	T	S	100.0
Ocnothera bienris	T	S	37.8		Stachys byzantina	T	O	100.0
Origanum marjonara	T	R	45.2		Stellaria media (linné) Cyrillo	T	O	51.2
Origanum vulgare	T	S	21.3		Tanacetum vulgare	T	R	30.5
Origanum vulgare	T	O	23.3		Tepary	T	R	31.7
Origanum vulgare	T	R	23.6		Tepary	T	O	39.7
Origanum vulgare	T	O	37.2		Thymus serpyllum	T	O	29.9
Panicum miliaceum	T	S	20.6		Thymus serpyllum	T	R	32.8
Panicum miliaceum	T	S	30.7		Thymus X citriodorus	T	S	22.1
Pastinaca saliva	T	R	26.1		Tiarella cordifolia	T	R	46.8
Pastinaca sativa	T	O	100.0		Tragopogon porrifolium	T	R	26.3
Peucedanum oreaselinum	T	S	39.6		Tragopogon porrifolium	T	R	29.8
Peucedanum oreaselinum	T	R	53.4		Tragopogon porrifolium	T	O	58.0
Phaseolus vulgaris	T	S	21.8		Triticale sp.	T	O	25.3
Phaseolus vulgaris	T	O	23.6		Tropaeolum majus	T	O	46.9
Phaseolus vulgaris	T	O	59.8		Tropaeolum majus	T	O	55.8
Physalis alkekengi	T	O	55.5		Tropaeolum majus	T	R	64.7
Physalis pruinosa	T	S	24.8		Tsuga can0adensis	T	R	39.2
Plantago major	T	O	77.1		Vaccinium angustifolium	T	R	28.0
Poa compressa	T	R	54.4		Vaccinium angustifolium	T	S	29.6
Polygonium chinense	T	O	36.3		Vaccinium angustifolium	T	R	33.3
Polygonium chinense	T	R	61.4		Vaccinium angustifolium Ait.	T	R	100.0
Polygonum persicaria	T	S	21.3		Vaccinium macrocarpon	T	S	25.1
Populus incrassata	T	S	50.7		Vaccinium macrocarpon	T	R	27.4
Populus incrassata	T	S	50.7		Vaccinium macrocarpon	T	O	35.4

Table 3
MMP-3

Populus X petrowskyana	T	R	66.7		Vaccinium macrocarpon	T	R	80.5
Prunus cerasifera	T	O	26.1		Vaccinium macrocarpon	T	O	90.5
Prunus cerasifera	T	R	64.2		Valeriana officinalis	T	O	33.0
Psidium guajaba	T	S	22.9		Veratrum viride	T	S	46.8
Ptaridium aquilinus	T	R	43.0		Verbascum thapsus	T	O	33.4
Pyrus pyrifolia	T	S	28.2		Vicia faba	T	R	26.6
Rahmnus frangula	T	R	25.9		Vicia faba	T	O	35.8
Raphanus sativus	T	R	21.4		Vigna angularia	T	S	29.3
Raphanus sativus	T	O	36.9		Vigna angularia	T	O	54.0
Rhamnus frangula	T	O	43.2		Vigna sesquipedalis	T	O	100.0
Rheum rhabarbarum	T	O	28.5		Vigna unguiculata	T	S	49.5
Rheum X cultorum	T	R	28.2		Vitia sp.	T	O	99.6
Rianus communis	T	S	32.4		Vitis sp	T	R	50.9
Ribes nidigrolaria	T	S	28.5		Vitis sp.	T	R	75.8
Ribes nigrum	T	R	49.9		Weigela coracensis	T	S	22.8
Rosa rugosa	T	S	29.1		Weigela coracensis	T	S	22.8
Weigela hortensis	T	R	54.9					
Zea mays	T	O	74.3					

Table 4
MMP-9

1

Nom latin	Stress	Extrait	Inhibition (%)
Abelmochus esculentus	A	S	26.8
Achillea millefolium	A	S	41.6
Aconitum napellus	A	O	47.7
Acorus calamus	A	O	83.2
Actinidia arguta	A	S	26.8
Adiantum pedatum	A	O	20.7
Agastache foeniculum	A	S	100.0
Agrimonia eupatoria	A	W	21.4
Agropyron cristatum	A	R	51.4
Agropyron repens	A	S	27.3
Agrostis alba	A	R	40.6
Agrostis Stofonifera	A	R	35.4
Alcea rosea	A	S	45.8
Alkanna tinctoria	A	S	42.5
Allium cepa	A	O	49.7
Allium grande	A	R	71.4
Allium porrum	A	S	28.0
Allium porrum	A	O	82.0
Allium sativum	A	S	23.7
Allium schoenoprasum	A	O	45.5
Allium tuberosum	A	V	20.1
Allium Tuberosum	A	O	91.5
Althaea officinalis	A	S	29.6
Amaranthus gangeticus	A	O	25.1
Amaranthus gangeticus	A	R	31.1
Amaranthus gangeticus	A	S	73.2
Amaranthus retroflexus	A	S	20.4
Ambrosia artemisiifolia	A	R	50.1
Amelanchier sanguinea	A	W	37.6
Anthemis nobilis	A	O	40.4
Anthemis nobilis	A	R	66.7
Anthemis tinctorium	A	S	30.3
Apium graveolens	A	R	71.2
Arachis hypogaea	A	V	23.5
Aralia cordata	A	S	21.2
Aralia cordata	A	S	56.3
Arctium minus	A	R	31.1
Arctostaphylos uva-ursi	A	S	31.2
Arctostaphylos uva-ursi	A	O	31.2
Arctostaphylos uva-ursi	A	R	59.7
Armoracia rusticana	A	W	25.1
Armoracia rusticana	A	S	56.2
Aronia melanocarpa	A	S	26.8
Aronia melanocarpa	A	S	41.3
Aronia melanocarpa	A	O	44.8
Aronia melanocarpa	A	W	47.7
Aronia melanocarpa	A	R	55.7
Aronia melanocarpa	A	V	100.0
Arrhenatherum elatius	A	R	40.4
Artemisia dracunculus	A	S	51.1
Asparagus officinalis	A	S	20.9
Asparagus officinalis	A	S	32.6
Aster sp	A	O	29.5
Aster sp	A	R	80.0
Atropa belladonna	A	S	47.4
Beta vulgaris	A	S	25.3
Beta vulgaris	A	R	26.6
Beta vulgaris	A	W	34.0
Beta vulgaris	A	O	42.0
Beta vulgaris	A	V	44.0

Nom latin	Stress	Extrait	Inhibition (%)
Brassica napus	A	R	53.1
Brassica napus	A	O	100.0
Brassica nigra	A	S	24.2
Brassica oleracea	A	R	33.0
Brassica oleracea	A	R	36.0
Brassica oleracea	A	W	36.2
Brassica oleracea	A	S	73.1
Brassica Oleracea	A	O	100.0
Brassica rapa	A	R	31.0
Brassica rapa	A	W	38.6
Brassica rapa	A	V	42.8
Brassica rapa	A	R	48.8
Brassica rapa	A	S	68.2
Brassica rapa	A	O	89.2
Bromus inermis	A	R	51.4
Campanula rapunculus	A	O	25.1
Canna edulis	A	S	31.1
Canna edulis	A	O	47.6
Canna edulis	A	R	68.9
Capsella bursa-pastoris	A	R	32.5
Capsicum annuum	A	O	22.0
Capsicum annuum	A	R	24.0
capsicum annuum	A	S	55.7
Capsicum frutescens	A	S	30.3
Capsicum frutescens	A	O	34.7
Carthamus tinctorius	A	R	28.5
Carum carvi	A	S	38.6
Chelidonium majus	A	O	27.9
Chenopodium bonus - henricus	A	R	47.4
Chenopodium bonus-henricus	A	O	20.7
Chenopodium bonus-henricus	A	W	23.2
chenopodium bonus-henricus	A	S	62.8
Chenopodium quinoa	A	V	23.1
Chenopodium quinoa	A	W	34.7
Chrysanthemum leucanthemum	A	O	20.6
Chrysanthemum leucanthemum	A	R	30.9
Chrysanthemun coronarium (Chp Suey)	A	R	26.4
Chrysanthenum coronarium	A	S	66.6
Cichorium intybus	A	S	44.7
Citrullus lanatus	A	S	62.1
Citrullus lanatus	A	O	70.6
Cornus canadensis	A	S	48.5
Cosmos sulphureus	A	S	23.4
Cosmos sulphureus	A	O	37.0
Crataegus sp	A	V	32.4
Crataegus sp	A	S	45.5
Crataegus sp	A	R	100.0
Crataegus submollis	A	S	45.5
Cryptotaenia canadensis	A	W	26.4
Cucumis Anguria	A	R	27.2
Cucumis anguria	A	S	36.6
Cucumis anguria	A	O	38.5
Cucumis melo	A	O	59.2
Cucumis sativus	A	R	39.8
Cucumis sativus	A	O	49.4
Cucumis sativus	A	S	54.4
Cucurbita Maxima	A	O	46.7
Cucurbita moschata	A	S	32.1
Cucurbita pepo	A	O	37.0

Table 4 2
MMP-9

Beta vulgaris spp. Maritima	A	R	44.0
Beta vulgaris var. condivata	A	R	35.4
Brassica napus	A	S	24.6
Curcurbita maxima	A	S	25.8
Cymbopogon citratus	A	O	26.7
Dactylis glomerata	A	R	27.2
Datisca cannabina	A	S	26.9
Datisca cannabina	A	O	38.0
Daucus carota	A	R	30.8
Daucus carota	A	O	31.9
Dirca palustris	A	O	27.3
Dirca palustris	A	S	34.2
Dolicos Lablab	A	S	22.0
Dolicos Lablab	A	R	25.3
Dryopteris filix-mas	A	S	24.9
Dryopteris filix-mas	A	R	40.6
Eleusine coracana	A	S	20.2
Eleusine coracana	A	R	20.9
Eleusine coracana	A	O	71.1
Elymus junceus	A	R	45.4
Erigeron canadensis	A	S	35.7
Eruca vesicaria	A	R	59.9
Fagopyrum esculentum	A	V	20.7
Fagopyrum tartaricum	A	W	30.3
Fagopyrum tartaricum	A	O	33.2
Festuca rubra	A	R	31.8
Foeniculum Vulgare	A	W	27.4
Foeniculum vulgare	A	O	50.6
Forsythia intermedia	A	O	100.0
Fragaria x ananassa	A	V	30.0
Fragaria x ananassa	A	S	36.3
Galium odoratum	A	R	26.9
Gaultheria hispidula	A	R	28.4
Gaultheria hispidula	A	S	40.7
Gentiana lutea	A	R	34.7
Glechoma hederacea	A	S	37.6
Glycine max	A	R	38.1
Glycine Max	A	O	56.4
Glycine max	A	S	71.4
Glycyrrhiza glabra	A	S	62.6
Glycyrrhiza glabra	A	W	100.0
Guizotia abyssinica	A	R	91.9
Hamamelis virginiana	A	S	41.0
Hamamelis virginiana	A	R	74.6
Hedeoma pulegioides	A	O	22.0
Helianthus tuberosus	A	W	21.2
Helianthus tuberosus	A	W	51.5
Helichrysum angustifolium	A	V	21.0
Heliotropium arborescens	A	S	54.1
Helleborus niger	A	S	37.8
Hordeum hexastichon	A	W	38.0
Hyssopus officinalis	A	O	25.1
Inula helenium	A	S	29.7
Isatis tinctoria	A	S	41.5
Lactuca serrila	A	R	41.3
Lactuca serriola	A	S	46.6
Laportea canadensis	A	S	26.3
Lathyrus sativus	A	O	22.2
Lathyrus sativus	A	R	50.2
Lathyrus sylvestris	A	V	31.3
Lathyrus sylvestris	A	W	31.8
Laurus nobilis	A	S	25.7

Curburbita pepo	A	R	41.0
Curburbita pepo	A	S	43.9
Curcuma zedoaria	A	S	67.6
Levisticum officinale	A	O	44.9
Linaria vulgaris miller	A	O	23.6
Linum usitatissimum	A	R	33.3
Lolium multiflorum	A	S	29.0
Lolium perenne	A	R	52.0
Lotus corniculatus	A	R	62.9
Lotus tetragonolobus	A	S	62.9
Lycopersicon esculentum	A	S	26.1
Lycopersicon esculentum	A	W	33.0
Malva moschata	A	S	31.8
Malva sylvestris	A	S	21.4
Malva verticillata	A	R	43.4
Matteucia pensylvanica	A	R	26.9
Medicago sativa	A	V	20.4
Melilotus albus	A	R	53.9
Melissa officinalis	A	S	21.4
Melissa officinalis	A	O	36.8
Melissa officinalis	A	R	53.7
Mentha piperita	A	S	57.7
Mentha pulegium	A	S	66.1
Mentha spicata	A	S	67.7
Mentha suaveolens	A	S	51.8
Momordica charantia	A	R	29.7
Momordica charantia	A	S	72.1
Nicotiana rustica	A	O	30.3
Nicotiana rustica	A	S	59.1
Nicotiana tabacum	A	S	39.0
Nicotiana tabacum	A	W	47.6
Nicotiana tabacum	A	O	100.0
Nigella sativa	A	R	59.4
Oenothera biennis	A	O	21.3
Oenothera biennis	A	O	36.7
Origanum vulgare	A	W	21.3
Origanum vulgare	A	V	42.7
Oryza sativa	A	W	56.5
Oxyria digyna	A	W	35.1
Oxyria digyna	A	V	76.4
Pastinaca sativa	A	V	20.3
Pastinaca sativa	A	W	23.2
Pastinaca sativa	A	O	42.1
Pastinaca sativa	A	R	46.9
Phalaris canariensis	A	R	20.3
Phalaris canariensis	A	O	80.5
Phaseolus mungo	A	O	51.3
Phaseolus mungo	A	S	74.1
Phaseolus vulgaris	A	V	23.0
Phaseolus vulgaris	A	O	51.4
Phaseolus vulgaris	A	S	62.6
Phlox paniculata	A	O	41.0
Physalis alkekengi	A	R	31.6
Physalis ixocarpa	A	S	45.2
Physalis ixocarpa	A	O	65.3
Physalis Pruinosa	A	O	87.3
Phytolacca americana	A	S	49.6
Phytolacca americana	A	O	89.8
Pimpinella anisum	A	S	100.0
Plantago coronopus	A	S	48.3
Plantago coronopus	A	O	89.3
Plantago major	A	S	21.8

Table 4 3
MMP-9

Laurus nobilis	A	V	30.0
Lavandula latifolia	A	S	40.3
Leonurus cardiaca	A	R	27.0
Lepidium sativum	A	S	41.8
Levisticum officinale	A	S	29.0
Polygonum persicaria	A	S	38.5
Potentilla anserina	A	S	26.3
Potentilla anserina	A	O	31.2
Poterium Sanquisorba	A	S	29.2
Pteridium aquilinum	A	S	27.3
Raphanus sativus	A	W	22.7
Raphanus sativus	A	R	30.8
Raphanus sativus	A	R	40.2
Raphanus sativus	A	S	71.5
Raphanus sativus	A	O	100.0
Rheum rhabarbarum	A	S	21.3
Rheum rhabarbarum	A	V	67.9
Rheum rhabarbarum	A	W	72.4
Ribes nidigrolaria	A	W	32.6
Ribes nidigrolaria	A	V	64.6
Ribes nigrum	A	W	23.6
Ribes nigrum	A	V	27.2
Ribes nigrum	A	S	41.0
Ribes nigrum	A	O	65.8
Ribes Nigrum	A	W	100.0
Ribes Salivum	A	R	75.4
Ribes Sylvestre	A	V	27.7
Ribes Sylvestre	A	W	100.0
ribes uva-crispa	A	S	24.4
Ribes Uva-crispa	A	W	36.6
Ricinus communis	A	R	21.6
Rosa rugosa	A	V	30.6
Rosa rugosa	A	S	36.2
Rosa rugosa	A	W	39.3
Rosmarinus officinalis	A	W	27.2
Rosmarinus officinalis	A	R	45.7
Rubus allegheniensis	A	S	53.7
Rubus canadensis	A	V	27.0
Rubus canadensis	A	S	41.0
Rubus canadensis	A	W	41.2
Rubus canadensis	A	S	45.1
Rubus idaeus	A	V	24.3
Rubus idaeus	A	S	39.7
Rubus idaeus	A	W	62.2
Rubus ideaus	A	R	37.0
Rumex acetosella	A	V	75.8
Rumex acotosa	A	W	25.5
Rumex crispus	A	R	73.3
Rumex crispus	A	O	60.5
Rumex patientia	A	O	49.4
Rumex patientia	A	S	65.8
Rumex Scutatus	A	W	25.5
Rumex Scutatus	A	V	61.9
Rumex Scutatus	A	O	93.8
Ruta graveolens	A	S	25.8
Ruta graveolens	A	W	27.1
Salix purpurea	A	S	22.1
Salix purpurea	A	R	33.8
Salvia elegans	A	W	23.7
Salvia officinalis	A	V	20.8
Salvia officinalis	A	S	31.4
Salvia sclarea	A	S	28.0

Poa compressa	A	R	22.4
Poa compressa	A	S	49.3
Poa pratensis	A	R	22.4
Polygonum pensylvanicum	A	S	43.3
Polygonum persicaria	A	O	21.6
Sium Sisarum	A	R	32.6
Sium Sisarum	A	O	42.7
Solanum dulcamara	A	S	43.3
Solanum dulcamara	A	O	48.6
Solanum melanocerasum	A	O	21.3
Solanum melongena	A	R	20.5
Solanum melongena	A	V	35.6
Solanum melongena	A	O	49.4
Solanum melongena	A	S	65.2
Solidago sp	A	R	32.7
Spinacia oleracea	A	S	41.0
Stachys affinis	A	R	22.5
Stachys affinis	A	S	43.9
Stachys affinis	A	O	92.0
Symphytum officinale	A	S	28.0
Tanacetum cinerariifolium	A	O	20.3
Tanacetum cinerariifolium	A	R	69.7
Tanacetum vulgare	A	O	20.2
Tanacetum vulgare	A	S	84.2
Teucrium chamaedrys	A	O	20.4
Teucrium chamaedrys	A	R	20.4
Thymus serpyllum	A	W	24.3
Thymus vulgaris	A	S	42.5
Thymus x citriodorus	A	W	27.4
Tragopogon porrifolius	A	W	21.9
Tragopogon porrifolius	A	V	26.2
Trifolium hybridum	A	R	30.9
Trifolium pannonicum	A	R	41.0
Trifolium repens	A	R	51.3
Trigonella foenum graecum	A	S	44.2
Triticum spelta	A	S	30.0
Triticum turgidum	A	S	31.3
Typha latifolia	A	S	57.7
Urtica dioica	A	O	26.5
Urtica dioica	A	S	50.2
Vaccinium Corymbosum	A	W	39.9
Vaccinium Corymbosum	A	S	64.8
Vaccinum augustifolium	A	R	44.8
Vaccinum macrocarpon	A	S	100.0
Veratrum viride	A	S	29.1
Veratrum viride	A	O	31.8
Verbascum thapsus	A	S	42.6
Verbascum thapsus	A	O	75.2
Viburnum trilobum	A	V	97.4
Vicia sativa	A	R	53.3
Vicia villosa	A	R	48.9
Vigna unguiculata	A	R	27.0
Vigna unguiculata	A	O	44.8
Vigna unguiculata	A	S	55.5
Vinca minor	A	S	35.1
Vitis sp.	A	V	52.2
Vitis sp.	A	S	59.6
Vitis sp.	A	R	87.8
Xanthium sibiricum	A	S	57.1
Zea mays	A	V	26.1
Zea mays	A	W	32.1
Zea Mays	A	O	38.7

Table 4 4
MMP-9

Satureja montana	A	W	21.7
Scuttellaria lateriflora	A	S	54.1
Secale cereale	A	V	22.6
Secale cereale	A	S	22.9
Secale cereale	A	W	26.9
Sesamum indicum	A	O	21.2
Setaria italica	A	O	27.0
Adiantum pedatum	G	S	31.7
Ageratum conyzoides	G	S	23.1
Agropyron cristatum	G	R	64.1
Agropyron repens	G	S	29.2
Agropyron repens	G	O	32.6
Agrostis Stolonifera	G	R	34.4
Alcea rosea	G	S	22.7
Alchemilla mollis	G	S	30.5
Alchemilla mollis	G	W	33.2
Allium ampeloprasum	G	O	53.4
Allium cepa	G	S	22.5
Allium cepa	G	O	60.7
Allium schoenoprasum	G	S	21.1
Allium schoenoprasum	G	O	60.4
Allium tuberosum	G	S	38.8
Allium tuberosum	G	O	74.4
Althaea officianalis	G	S	54.9
Amaranthus candathus	G	O	42.6
Amaranthus caudathus	G	W	27.1
Amaranthus gangeticus	G	S	56.8
Amaranthus gangeticus	G	S	74.4
Ambrosia artemisiifolia	G	R	49.0
Amelanchier sanguinea	G	W	45.2
Angelica archangelica	G	S	20.9
Anthemis nobilis	G	R	58.9
Apium graveolens	G	O	30.4
Apium graveolens	G	S	36.4
Apium graveolens	G	R	60.6
Arachis hypogaea	G	W	26.0
Aralia cordata	G	S	66.0
Arctium minus	G	O	26.6
Arctium minus	G	R	30.8
Arctostaphylos uva-ursi	G	S	29.3
Arctostaphylos uva-ursi	G	O	38.8
Arctostaphylos uva-ursi	G	R	80.2
Armoracia rusticana	G	S	62.7
Aronia melanocarpa	G	O	26.7
Aronia melanocarpa	G	V	100.0
Aronia melanocarpa	G	R	100.0
Aronia melanocarpa (Michx.) Ell.	G	W	39.1
Artemisia dracunculus	G	O	44.3
Artemisia dracunculus	G	S	65.4
Asclepias incarnata	G	R	20.3
Asparagus officinalis	G	O	22.3
Asparagus officinalis	G	S	26.6
Asparagus officinalis	G	W	28.7
Aster sp	G	O	34.3
Aster sp	G	R	62.6
Atropa belladonna	G	S	34.9
Beta vulgaris	G	R	28.3
Beta vulgaris	G	R	42.2
Beta vulgaris	G	O	47.0
Beta vulgaris spp. Maritima	G	O	46.7
Brassica cepticepa	G	R	26.7
Brassica cepticepa	G	S	68.3

Achillea millefolium	G	S	45.5
Aconitum napellus	G	S	24.0
Aconitum napellus	G	O	53.9
Acorus calamus	G	O	87.6
Acorus calamus	G	S	100.0
Actinidia arguta	G	S	33.8
Adiantum pedatum	G	R	31.6
Brassica oleracea	G	S	76.1
Brassica oleracea	G	O	100.0
Brassica rapa	G	R	21.1
Brassica rapa	G	S	64.0
Brassica rapa	G	O	100.0
Bromus inermis	G	R	36.7
Campanula rapunculus	G	O	59.9
Canna edulis	G	O	20.8
Canna edulis	G	O	83.1
Capsicum annuum	G	R	20.2
Capsicum annuum	G	S	29.6
Capsicum annuum	G	O	51.5
Capsicum annuum	G	S	60.8
Capsicum frutescens	G	S	32.8
Carthamus tinctorius	G	R	29.8
Carum carvi	G	S	30.4
Chelidonium majus	G	O	39.9
Chenopodium bonus-henricus	G	O	63.0
Chenopodium quinoa	G	O	34.1
Chenopodium quinoa	G	W	42.8
Chenopodium quinoa	G	V	46.1
Chichorium endivia subsp endivia	G	W	22.0
Chichorium endivia subsp endivia	G	S	22.9
Chrysanthemum coronarium	G	R	23.2
Chrysanthemum coronarium	G	S	68.4
Chrysanthemum leucanthemum	G	R	20.5
Cicer arietinum	G	S	25.7
Cichorium intybus	G	W	51.1
Cichorium intybus	G	S	53.4
Citrullus lanatus	G	S	36.5
Citrullus lanatus	G	O	71.5
Coix Lacryma-Jobi	G	O	21.0
Cornus canadensis	G	S	34.8
Crataegus sp	G	W	54.0
Crataegus submollis	G	S	31.3
Cryptotaenia canadensis	G	W	32.1
Cucumis anguria	G	S	27.3
Cucumis anguria	G	O	32.5
Cucumis sativus	G	O	39.4
Cucumis sativus	G	S	69.4
Cucurbita maxima	G	O	34.1
Cucurbita maxima	G	S	42.6
Cucurbita moschata	G	S	32.0
Cucurbita moschata	G	O	39.2
Cucurbita pepo	G	S	28.8
Cucurbita pepo	G	O	32.6
Curcuma zedoaria	G	O	23.3
Curcuma zedoaria	G	S	57.6
Cymbopogon citratus	G	O	70.1
Cynara scolymus	G	S	20.2
Cynara scolymus	G	O	37.5
Cynara scolymus	G	R	88.7
Cyperus esculentus	G	S	66.7
Datura metel	G	S	29.2
Datura stramonium	G	O	27.6

Table 4
MMP-9

Brassica juncea	G	O	45.0
Brassica juncea	G	S	66.1
Brassica Napus	G	S	27.5
Brassica Napus	G	R	37.6
Brassica napus	G	O	94.8
Brassica nigra	G	S	36.4
Brassica oleracea	G	R	38.7
Brassica oleracea	G	W	39.0
Brassica oleracea	G	R	49.4
Echinochloa frumentacea	G	O	68.4
Eleusine coracana	G	O	47.8
Elymus junceus	G	R	42.7
Erigeron canadensis	G	S	37.8
Erigeron speciosus	G	R	34.6
Errhenatherum elatius	G	R	34.4
Fagopyrum tartaricum	G	W	31.4
Foeniculum vulgare	G	W	28.0
Foeniculum vulgare	G	S	44.6
Foeniculum vulgare	G	O	68.9
Foeniculum Vulgare	G	R	100.0
Forsythia intermedia	G	O	100.0
Forsythia x intermedia	G	O	79.5
Galium odoratum	G	S	32.4
Galium odoratum	G	R	100.0
Gaultheria hispidula	G	R	48.4
Gaultheria hispidula	G	S	80.4
Gaultheria hispidula	G	O	100.0
Gaultheria procumbens	G	S	26.9
Gaultheria procumbens	G	W	54.3
Glechoma hederacea	G	S	26.6
Glycine max	G	R	52.5
Glycine max	G	O	67.9
Glycine max	G	O	75.8
Glycyrrhiza glabra	G	R	21.4
Glycyrrhiza glabra	G	V	21.6
Glycyrrhiza glabra	G	W	100.0
Guizotia abyssinica	G	R	91.4
Hamamelis virginiana	G	O	39.8
Hamamelis virginiana	G	R	78.8
Hamamelis virginiana	G	S	96.6
Hedeoma pulegioides	G	S	45.4
Helenium hoopesii	G	S	22.6
Helenium hoopesii	G	O	52.8
Helianthus annuus	G	R	22.0
Helianthus annuus	G	S	31.6
Helianthus strumosus	G	R	30.5
Helianthus strumosus	G	O	71.7
Helianthus tuberosus	G	W	21.2
Helianthus tuberosus	G	S	50.7
Helianthus tuberosus L.	G	R	24.9
Heliotropium arborescens	G	S	40.0
Heliotropium arborescens	G	O	45.6
Helleborus niger	G	S	38.0
Hordeum vulgare	G	S	21.5
Humulus lupulus	G	O	35.1
Hypericum sp	G	W	26.1
Hyssopus officinalis	G	S	74.5
Iberis amara	G	O	20.9
Iberis amara	G	S	21.7
Inula helenium	G	S	27.6
Ipomoea batatas	G	S	37.5
Isatis tinctoria	G	S	48.0

Daucus carota	G	O	24.2
Daucus carota	G	R	29.3
Dipsacus sativus	G	S	48.7
Dirca palustris	G	O	29.9
Dirca palustris	G	S	36.4
Dolichos Lablab	G	S	35.8
Dolichos Lablab	G	R	74.5
Dryopteris filix-mas	G	S	27.9
Dryopteris filix-mas	G	R	42.6
Leonurus cardiaca	G	O	22.6
Lepidium sativum	G	S	23.3
Levisticum officinale	G	S	23.1
Levisticum officinale	G	W	27.5
Levisticum officinale	G	O	41.3
Linum usitatissimum	G	R	21.4
Lolium perenne	G	R	32.7
Lotus corniculatus	G	R	54.2
Malus hupehensis	G	R	26.4
Malva verticillata	G	R	37.9
Matricaria recutita	G	O	50.3
Medicago sativa	G	W	29.1
Melilotus albus	G	R	52.1
Melissa officinalis	G	O	22.7
Melissa officinalis	G	S	35.9
Melissa officinalis	G	R	38.6
Mentha piperita	G	S	64.4
Mentha suaveolens	G	W	22.5
Momordica charantia	G	R	29.3
Momordica charantia	G	S	90.6
Nepeta cataria	G	R	50.5
Nicotiana rustica	G	O	35.3
Nicotiana rustica	G	S	100.0
Nicotiana tabacum	G	S	31.6
Nicotiana tabacum	G	O	100.0
Nigella sativa	G	R	24.2
Ocimum basilicum	G	S	30.6
Oenothera biennis	G	O	48.0
Oenothera biennis	G	R	76.6
Origanum vulgare	G	V	41.3
Oryza Saliva	G	O	22.1
Oxyria digyna	G	O	26.5
Oxyria digyna	G	V	70.3
Panicum miliaceum	G	O	94.4
Pastinaca sativa	G	R	29.4
Pastinaca sativa	G	S	79.2
Pennisetum alopecuroides	G	O	22.0
Petasites japonicus	G	S	29.2
Peucedanum oreaselinum	G	O	21.3
Phacelia tanacetifolia	G	R	23.5
Phalaris arundinacea	G	R	47.5
Phalaris canariensis	G	R	23.1
Phalaris canariensis	G	O	100.0
Phaseolus coccineus	G	O	37.0
Phaseolus coccineus	G	R	74.1
Phaseolus mungo	G	O	42.2
Phaseolus mungo	G	S	52.2
Phaseolus vulgaris	G	V	35.5
Phaseolus vulgaris	G	S	48.0
Phaseolus vulgaris	G	O	58.1
Phlox paniculata	G	S	32.2
Phlox paniculata	G	O	40.1
Physalis ixocarpa	G	O	20.6

Table 4 6
MMP-9

Lachica serrola	G	R	53.0
Lactuca sativa	G	W	24.5
Laportea canadensis	G	S	36.0
Laportea canadensis	G	O	81.7
Lathyrus sativus	G	W	37.8
Lathyrus sylvestris	G	R	40.7
Lathyrus sylvestris	G	O	79.1
Laurus nobilis	G	S	22.7
Lavandula angustifolia	G	S	31.7
Lavandula latifolia	G	O	27.2
Ledum groenlandicum	G	S	61.1
Poa compressa	G	R	22.1
Poa compressa	G	S	45.5
Poa pratensis	G	R	35.7
Polygonum pensylvanicum	G	S	38.3
Polygonum persicaria	G	S	31.0
Potentilla anserina	G	O	46.8
Poterium sanquisorba	G	S	24.7
Poterium sanquisorba	G	W	30.6
Prunus cerasifera	G	R	45.9
Pteridium aquilinum	G	S	22.4
Raphanus Raphanistrum	G	S	36.5
Raphanus Raphanistrum	G	O	75.0
Raphanus sativus	G	R	20.8
Raphanus sativus	G	R	27.5
Raphanus sativus	G	S	35.4
Rheum rhabarbarum	G	S	27.0
Ribes Grossularia	G	W	33.7
Ribes nidigrolaria	G	S	30.7
Ribes nidigrolaria	G	V	40.5
Ribes nigrum	G	V	35.9
Ribes nigrum	G	W	58.6
Ribes Silvestris	G	V	26.9
Ribes Silvestris	G	W	100.0
Ricinus communis	G	R	21.8
Rosmarinus officinalis	G	S	24.7
Rosmarinus officinalis	G	W	30.9
Rosmarinus officinalis	G	R	60.3
Rubus ideaus	G	O	32.5
Rubus ideaus	G	S	47.0
Rubus occidentalis	G	S	39.4
Rubus occidentalis	G	R	74.1
Rumex acetosa	G	W	45.6
Rumex acetosella	G	W	22.8
Rumex acetosella	G	V	31.5
Rumex crispus	G	O	25.9
Rumex crispus	G	R	70.3
Rumex patientia	G	O	39.8
Rumex patientia	G	S	54.2
Rumex scutatus	G	W	23.8
Rumex scutatus	G	V	69.9
Rumex scutatus	G	O	78.8
Ruta graveolens	G	R	30.7
Ruta graveolens	G	S	61.5
Salvia elagens	G	W	25.4
Salvia elegans	G	S	31.1
Sambucus canadensis	G	W	80.6
Sambucus ebulus	G	W	26.1
Sambucus ebulus	G	V	34.4
Sambucus ebulus	G	S	37.8
Sanguisorba officinalis	G	R	100.0
Santolina chamaecyparissus	G	R	21.7

Physalis pruinosa	G	O	80.0
Phytolacca americana	G	S	62.0
Phytolacca americana	G	O	100.0
Pimpinella anisum	G	S	37.3
Pisum sativum	G	W	34.4
Pisum sativum	G	O	63.3
Plantago coronopus	G	O	42.7
Plantago coronopus	G	S	46.4
Plantago major	G	O	28.3
Plantago major	G	S	41.4
Plectranthus sp.	G	S	29.3
solanum melongena	G	S	36.6
solanum melongena	G	O	40.1
solanum melongena	G	V	50.0
solanum melongena	G	S	74.9
Solanum tuberosum	G	S	39.1
Solanum tuberosum	G	O	39.2
Solidago sp	G	R	30.7
Sorghum caffrorum	G	O	87.9
Sorghum dochna	G	W	20.6
Sorghum dochna	G	O	20.6
Sorghum dochna	G	S	34.1
Sorghum dochna	G	O	97.0
Sorghum durra	G	O	30.6
sorghum durra	G	S	30.6
sorghum durra	G	O	48.0
Sorghum sudanense	G	S	21.7
Sorghum sudanense	G	O	24.6
Sorghum sudanense	G	V	32.1
Spinacia oleracea	G	S	53.2
Stachys Affinis	G	S	25.0
Stachys Affinis	G	R	27.8
Stachys Affinis	G	O	100.0
Symphytum officinale	G	W	21.7
Symphytum officinale	G	O	25.2
Symphytum officinale	G	S	34.6
Tanacetum cinerariifolium	G	R	52.4
Tanacetum vulgare	G	R	27.1
Tanacetum vulgare	G	S	72.7
Teucrium chamaedrys	G	R	24.6
Teucrium chamaedrys	G	O	52.8
Thymus fragantissumus	G	R	100.0
Thymus vulgaris	G	V	24.2
Thymus x citriodorus	G	S	23.7
Tiarella cordifolia	G	S	20.8
Tiarella cordifolia	G	O	30.8
Tragopogon porrifolius	G	O	22.8
Trifolium hybridum	G	R	24.7
Trifolium pannonicum	G	R	65.5
Trifolium repens	G	R	57.5
Trigonella foenumgraecum	G	S	37.6
Triticum furgidum	G	S	56.5
Triticum spelta	G	S	40.8
Tropaeolum majus	G	O	76.1
Typha latifolia	G	S	43.3
Urtica dioica	G	S	40.3
Vaccinium angustifolium	G	S	42.4
Vaccinium corymbosum	G	S	61.5
Vaccinium macrocarpon	G	S	43.7
Vaccinum angustifolium	G	R	23.1
Veratrum viride	G	S	43.6
Verbascum thapsus	G	S	37.8

Table 4 7
MMP-9

Santolina chamaecyparissus	G	S	25.2
Satureja montana	G	O	21.2
Scuttellaria lateriflora	G	S	37.0
Secale cereale	G	S	26.7
Secale cereale	G	W	27.3
Serratula tinctoria	G	S	36.2
Serratula tinctoria	G	O	70.3
Sesamum indicum	G	O	27.6
Sesamum indicum	G	S	44.3
Silybum marianum	G	S	34.7
Sium sisarum	G	O	79.0
Solanum dulcamara	G	R	25.2
Solanum dulcamara	G	S	64.6
Vinca minor	G	O	33.6
Vinca minor	G	S	34.3
Vitis sp.	G	O	29.0
Vitis sp.	G	W	50.2
Vitis sp.	G	S	53.3
Vitis sp.	G	V	63.0
Vitis sp.	G	R	86.6
Withania somnifera	G	S	20.3
Xanthium sibiricum	G	S	34.7
Xanthium strumarium	G	S	23.2
Zea mays	G	V	20.1
Zea mays	G	S	45.9
Zea mays	G	O	97.5
Abelmochus esculentus	T	S	24.8
Abies lasiocarpa	T	W	44.7
Achillea millefolium	T	O	24.1
Achillea millefolium	T	S	59.2
Aconitum napellus	T	S	40.6
Aconitum napellus	T	O	41.6
Acorus calamus	T	O	47.1
Actinidia arguta	T	S	21.8
Adiantum pedatum	T	S	26.8
Adiantum pedatum	T	O	45.8
Adiantum pedatum	T	R	86.0
Agaricus bisporus	T	S	26.3
Agaricus bisporus	T	O	29.8
Agaricus bisporus	T	W	36.9
Agaricus bisporus	T	W	44.0
Agaricus bisporus	T	S	46.0
Agastache foeniculum	T	S	70.0
Ageratum conyzoides	T	S	31.7
Agropyron cristatum	T	R	86.9
Agropyron repens	T	O	49.6
Agrostis alba	T	R	21.9
Agrostis Stolonifera	T	R	35.8
Alcea rosea	T	S	35.2
Alchemilla mollis	T	S	37.9
Allium ampeloprasum	T	O	48.0
Allium ascalonicum	T	S	26.2
Allium ascalonicum	T	O	77.2
Allium cepa	T	O	92.6
Allium grande	T	R	60.4
Allium schoenoporasum	T	O	65.8
Allium schoenoprasum	T	W	31.0
Allium tuberosum	T	S	22.8
Allium tuberosum	T	O	99.7
Althaea officianalis	T	S	22.8
Althaea officinalis	T	O	22.1
Amaranthus candathus	T	W	43.9

Verbascum thapsus	G	O	87.0
Veronica officinalis	G	S	30.5
Viburnum trilobum	G	S	49.4
Viburnum trilobum	G	R	100.0
Viburnum trilobum	G	V	100.0
Vicia faba	G	R	50.5
Vicia sativa	G	R	42.4
Vicia villosa	G	R	89.2
Vigna angularia	G	R	28.1
Vigna angularia	G	S	71.5
Vigna unguiculata	G	R	21.0
Vigna unguiculata	G	O	38.7
Vigna unguiculata	G	S	61.1
Apium graveolens	T	W	32.4
Apium graveolens	T	R	56.6
Aralia cordata	T	R	29.2
Aralia cordata	T	S	45.0
Arctium minus	T	R	25.8
Arctostaphylos uva-ursi	T	O	31.0
Arctostaphylos uva-ursi	T	S	35.2
Arctostaphylos uva-ursi	T	R	58.6
Armoracia rusticana	T	W	24.9
Armoracia rusticana	T	S	52.9
Aronia melanocarpa	T	W	40.0
Aronia melanocarpa	T	V	91.9
Aronia prunifolia	T	W	100.0
Arrhenatherum elatius	T	R	22.8
Artemisia draculus	T	S	74.9
Artemisia dracunculus	T	S	47.8
Asclepias incarnata	T	R	20.5
Asctinidia chinensis	T	V	43.4
Asctinidia chinensis	T	O	66.4
Asparagus officinalis	T	O	91.3
Asparagus officiralis	T	R	23.3
Asparagus officiralis	T	S	44.7
Aster Linné	T	S	47.5
Aster sp	T	R	62.0
Atriplex hortensis	T	R	54.6
Atropa belladonna	T	R	20.1
Atropa belladonna	T	S	51.0
Avena sativa	T	R	24.8
Avena sativa	T	W	26.4
Averrhoa carambola	T	W	23.4
Ayperus esculentus	T	S	46.2
Beta vulgaris	T	R	28.2
Beta vulgaris	T	S	30.4
Beta vulgaris	T	O	56.8
Beta vulgaris spp. Maritima	T	R	23.6
Betula glandulosa	T	O	22.2
Betula glandulosa	T	V	22.2
Betula glandulosa	T	S	25.7
Betula glandulosa	T	W	32.9
Boletus edulis	T	S	36.2
Boletus edulis	T	O	90.2
Borago officinalis	T	S	27.9
Borago officinalis	T	O	76.1
Brassica cepticepa	T	O	65.4
Brassica cepticepa	T	S	71.5
Brassica Chineusis	T	R	27.1
Brassica juncea	T	O	51.0
Brassica juncea	T	R	66.0
Brassica juncea	T	S	74.1

Table 4 8
MMP-9

Amaranthus gangeticus	T	O	30.3
Amaranthus gangeticus	T	S	66.0
Ambrosia artemisiifolia	T	R	58.7
Amelanchier alnitolia	T	R	70.5
Amelanchier sanguinea	T	W	37.3
Ananas comosus	T	W	23.8
Ananas comosus	T	V	95.0
Ananas comosus	T	O	99.6
angelica archangelica	T	S	30.5
angelica archangelica	T	R	38.9
Anthemis nobilis	T	O	41.4
Anthemis nobilis	T	R	72.8
Anthemis tinctorium	T	S	27.3
Anthriscus cerefolium	T	W	35.8
Apium graveolens	T	S	31.7
Brassica rapa	T	R	33.9
Brassica rapa	T	R	56.0
Brassica rapa	T	S	69.7
Brassica rapa	T	O	100.0
Bromus inermis	T	R	57.3
Campanula rapunculus	T	O	77.5
Canna edulis	T	O	75.6
Cantharellus ciparium	T	O	52.5
Capsella bursa-pastoris	T	O	35.9
Capsicum annus	T	S	43.9
Capsicum annuum	T	S	50.1
Capsicum frutescens	T	S	28.9
Carica papaya	T	W	31.1
Carthamus tinctorius	T	R	37.3
Carum carvi	T	S	30.1
Castanea spp.	T	W	21.7
Chaerophyllum bulbosum	T	S	46.0
Chamaemelum nobile	T	W	36.8
Chamaemelum nobile	T	W	48.4
Chelidonium majus	T	O	46.6
Chenapodium bonus-henricus	T	R	22.4
Chenopodium bonus-henricus	T	S	57.6
Chenopodium quinoa	T	V	35.5
Chenopodium quinoa	T	W	54.4
Chrysanthemum leucanthemum	T	R	26.5
Chrysanthemun coronarium (Chp suey)	T	R	48.4
Chrysanthenum coronarium	T	R	38.2
Chrysanthenum coronarium	T	S	63.9
Cicer arietinum	T	S	20.0
Cichorium endivia	T	S	25.6
Cichorium endivia crispa	T	O	38.4
Cichorium intybus	T	S	30.2
Cimicifuga racemosa	T	S	33.7
Citrullus colocynthus	T	S	20.4
Citrullus lanatus	T	O	68.3
Citrullus lanatus	T	S	31.9
Citrus limettoides	T	W	20.4
Citrus limettoides	T	V	37.5
Citrus limon	T	V	47.7
Citrus limon	T	O	72.4
Citrus paradisi	T	W	23.8
Citrus paradisi	T	V	33.4
Citrus reticulata	T	V	20.4
Citrus reticulata	T	V	20.9
Citrus reticulata	T	W	26.0
Citrus reticulata	T	S	40.4
Citrus reticulata	T	O	50.0
Citrus reticulata	T	O	79.2

Brassica Napus	T	S	22.0
Brassica Napus	T	R	34.0
Brassica Napus	T	O	100.0
Brassica nigra	T	S	26.7
Brassica nigra	T	O	27.4
Brassica nigra	T	R	82.5
Brassica oleracea	T	O	21.2
Brassica oleracea	T	S	22.1
Brassica oleracea	T	W	26.2
Brassica oleracea	T	R	27.2
Brassica oleracea	T	O	31.3
Brassica oleracea	T	W	46.5
Brassica oleracea	T	S	71.2
Brassica oleracea	T	O	93.5
Brassica rapa	T	R	25.6
Cucumis melo	T	O	46.2
Cucumis metuliferus	T	W	32.0
Cucumis sativus Fanfare	T	O	40.3
Cucurbita maxima	T	S	23.6
Cucurbita maxima	T	S	33.1
Cucurbita maxima	T	O	55.2
Cucurbita moschata	T	S	20.1
Cucurbita moschata	T	S	26.7
Cucurbita moschata	T	O	41.7
Cucurbita pepo	T	S	41.9
Cucurbita pepo	T	O	82.9
Curcuma zedoaria	T	S	100.0
Cydonia oblonga	T	W	42.9
Cynara scolymus	T	R	51.6
Cynara scolymus	T	S	60.9
Dactilis Glomerata	T	R	25.7
Datura stramonium	T	R	21.9
Daucus carota	T	R	25.9
Dioscorea batatas	T	O	47.6
Dioscorea batatas	T	O	83.1
Diospiros Kaki	T	W	34.9
Dirca palustris	T	S	27.6
Dirca palustris	T	O	90.4
Dolichus lablab	T	R	66.4
Dolichus lablab	T	O	85.3
Dryopteris filix-mas	T	S	21.9
Dryopteris filix-mas	T	R	77.9
Echinacea purpurea	T	S	48.6
Eleusine coracana	T	O	45.2
Elymus junceus	T	R	41.0
Erigeron canadensis	T	S	31.4
Eriobotrya japonica	T	W	28.3
Eruca vesicaria	T	R	44.9
Fagopyrum esculentum	T	W	76.7
Fagopyrum tartaricum	T	W	42.6
Festuca rubra	T	R	29.6
Festuca rubra	T	S	42.9
Foeniculum vulgare	T	V	22.1
Foericulum vulgare	T	S	21.6
Foericulum vulgare	T	O	84.8
Forsythia intermedia	T	O	70.8
Forsythia x intermedia	T	O	60.2
Fortunella spp	T	S	35.7
Fortunella spp	T	W	50.7
Fortunella spp	T	O	74.5
Fragaria	T	W	24.8
Fragaria	T	V	52.4
Fragaria	T	O	100.0

Table 4 9
MMP-9

Citrus sinensis	T	W	25.3
Citrus sinensis	T	V	59.8
Coix Lacryma-Jobi	T	W	20.0
Corchorus olitorius	T	S	38.9
Cornus canadensis	T	S	35.6
Cosmos sulphureus	T	S	51.4
Crataegus sp	T	V	28.0
Crataegus sp	T	R	60.9
Crataegus submollis	T	O	25.5
Crithmum maritima	T	S	50.6
Cryptotaenia canadensis	T	O	21.2
Cryptotaenia canadensis	T	W	26.0
Cryptotaenia canadensis	T	V	40.0
Cucumis anguria	T	S	38.7
Cucumis anguria	T	O	46.6
Cucumis melo	T	S	30.3
Hamamelis virginiana	T	O	52.4
Hamamelis virginiana	T	S	67.5
Hamamelis virginiana	T	R	84.1
Hedeoma pulegiodes	T	S	57.4
Helenium hoopesii	T	O	33.7
Helenium hoopesii	T	S	49.0
Helianthus annus	T	S	53.4
Helianthus strumosus	T	R	20.3
Helianthus strumosus	T	O	71.7
Helianthus tuberosa	T	W	22.8
Helianthus tuberosus L.	T	V	22.6
Helianthus tuberosus L.	T	S	55.0
Helichrysum angustifolium	T	S	67.0
Heliotropium arborescens	T	S	58.9
Helleborus niger	T	S	31.9
Hibiscus cannabinus	T	S	48.9
Hordeum vulgare	T	S	29.2
Humulus lupulus	T	W	22.4
Humulus lupulus	T	R	39.1
Humulus lupulus	T	O	63.1
Humulus lupulus	T	S	100.0
Hydrastis canadensis	T	S	20.2
Hydrastis canadensis	T	W	31.0
Hyoscyamus niger	T	O	56.8
Hypericum henryi	T	O	48.8
Hypericum perforatum	T	S	48.1
Hypericum perforatum	T	O	63.7
Hypomyces lactiflorum	T	S	44.8
Hypomyces lactiflorum	T	O	60.9
Hyssops officinalis	T	W	22.9
Inula helenium	T	S	24.6
Juniperus communis	T	S	33.0
Juniperus communis	T	O	38.2
Lactuca sativa	T	S	44.5
Lactuca sativa	T	R	50.7
Laportea canadensis	T	S	30.2
Lathyrus Sativus	T	O	20.4
Lathyrus Sativus	T	R	52.5
Lathyrus sylvestris	T	W	27.7
Lathyrus sylvestris	T	O	36.8
Laurus nobilis	T	S	52.0
Lavendula angustifolia	T	W	26.4
Lavendula angustifolia	T	S	53.2
Lavendula latifolia	T	S	51.3
Ledum groenlandicum	T	S	44.4
Lentinus edodes	T	W	42.1

Fragaria x ananassa	T	S	29.3
Galium odoratum	T	R	26.0
Gaultheria hispidula	T	W	40.3
Ginkgo biloba	T	V	27.0
Ginkgo biloba	T	W	68.9
Glechoma hederacea	T	R	20.4
Glechoma hederacea	T	S	30.4
Glycine max	T	O	26.6
Glycine max	T	R	47.4
Glycine max	T	S	82.0
Glycyrrhiza glabra	T	S	35.4
Glycyrrhiza glabra	T	O	40.5
Glycyrrhiza glabra	T	W	100.0
Gossypium herbaceum	T	S	36.1
Guizotia abyssinica	T	R	28.9
Guizotia abyssinica	T	S	40.4
Malus	T	V	44.4
Malus hupehensis (Pamp.) Rehd.	T	R	26.3
Malus hupehensis (Pamp.) Rehd.	T	S	67.0
Malus sp.	T	R	65.3
Malva moschata	T	S	41.1
Malva sylvestris	T	S	36.4
Malva sylvestris	T	O	47.4
Malva verticillata	T	R	42.7
Mangifera indica	T	O	30.5
Manihot esculenta syn. M. utilissima	T	W	38.3
Manihot esculenta syn. M. utilissima	T	S	50.4
Manihot esculenta syn. M. utilissima	T	O	86.5
Melilotus alba	T	R	30.4
Melilotus officinalis	T	R	68.1
Melissa officinalis	T	S	33.7
Melissa officinalis	T	O	34.7
mentha arvensis	T	R	53.7
Mentha suaveolens	T	S	26.8
Menyanthes trifoliata	T	S	32.8
Miscanthus sinensis Andress	T	R	22.7
Momordica charantia	T	S	55.5
Monarda didyma	T	S	26.8
Monarda fistulosa	T	S	21.5
Montia perfoliata	T	R	26.6
Musa paradisiaca	T	W	29.0
nasturtium officinale	T	S	35.4
Nepeta cataria	T	W	26.5
Nepeta cataria	T	O	27.5
Nepeta cataria	T	S	41.9
Nephelium longana ou Euphoria longana	T	W	43.4
Nicotiana rustica	T	O	26.0
Nicotiana rustica	T	S	32.7
Nicotiana tabacum	T	S	25.1
Nicotiana tabacum	T	O	77.7
Nigella sativa	T	R	59.3
Nigella sativa	T	R	100.0
Ocimum Basilicum	T	W	20.2
Ocimum Basilicum	T	V	20.2
Ocimum Basilicum	T	S	32.8
Oenothera biennis linné	T	R	100.0
Onobrychis viciafolia	T	R	45.0
Optunia sp.	T	W	33.4
Origanum marjonara	T	O	20.5
Origanum vulgare	T	O	20.8
Origanum vulgare	T	W	21.6
Oryza sativa	T	W	42.4

Table 4
MMP-9

Lentinus edodes	T	O	100.0
Lepidium sativum	T	S	44.2
Levisticum officinale	T	S	20.8
Levisticum officinale	T	O	39.4
Linum usitatissimum	T	R	42.3
Litchi chinensis	T	W	25.7
Lolium multiflorum	T	S	20.6
Lolium perenne	T	R	28.7
Lonicera ramosissima	T	S	26.3
Lonicera ramosissima	T	O	40.4
Lonicera ramosissima	T	W	53.2
Lonicera syringantha	T	W	95.8
Lotus corniculatus	T	R	100.0
Lotus tetragonolubus	T	S	65.4
Lunaria annua	T	O	55.7
Lunaria annua	T	S	67.3
Lycopersicon esculentum	T	R	37.6
Malus	T	W	31.8
Phaseolus mungo	T	O	37.9
Phaseolus vulgaris	T	R	20.1
Phaseolus vulgaris	T	S	51.9
Phaseolus vulgaris	T	O	61.7
Phlox paniculata	T	S	22.9
Phlox paniculata	T	O	44.5
Phoenix dactylifera	T	O	29.6
Physalis alkekengi	T	R	32.9
Physalis ixocarpa	T	R	26.6
Physalis ixocarpa	T	O	28.3
Physalis pruinosa	T	S	27.3
Physalis pruinosa	T	R	47.8
Physalis pruinosa	T	O	93.1
Physalis sp	T	W	39.1
Physalis sp	T	V	60.8
Phytolacca americana	T	S	41.8
Phytolacca americana	T	O	100.0
Phytolacca decandra syn. P. americana	T	O	85.9
Pimpinella anisum	T	S	20.2
Pimpinella anisum	T	O	68.4
Pisum sativum	T	W	20.1
Pisum sativum	T	S	25.8
Pisum sativum	T	V	27.0
Pisum sativum	T	O	51.8
Plantago coronopus	T	R	21.9
Plantago coronopus	T	O	48.6
Plantago coronopus	T	S	66.8
Plantago major	T	S	35.1
Pleurotus spp	T	W	25.3
Pleurotus spp	T	S	59.3
Pleurotus spp	T	O	85.2
Poa compressa	T	R	26.2
Poa pratensis	T	O	21.5
Poa pratensis	T	R	30.0
Podophyllum peltatum	T	O	33.9
Podophyllum peltatum	T	S	50.2
Polygonum aviculare linné	T	R	31.0
Polygonum pennsylvanicum	T	S	56.6
Polygonum persicaria	T	S	20.1
Populus incrassata	T	W	54.9
Populus Tremula	T	W	31.0
Populus X petrowskyana	T	W	100.0
Potentilla anserina	T	S	22.1
Potentilla anserina	T	O	41.1
oxyria digyna	T	O	57.0
oxyria digyna	T	V	77.9
Panax quinquefolius L.	T	O	23.5
Panicum miliaceum	T	W	36.5
Passiflora spp	T	S	35.8
Passiflora spp	T	V	38.3
Passiflora spp	T	W	46.2
Passiflora spp	T	O	100.0
Pastinaca sativa	T	O	21.7
Pastinaca sativa	T	R	38.6
Pastinaca sativa	T	S	39.2
Persea americana	T	V	32.5
Persea americana	T	O	38.6
Petasites Japonicus	T	S	26.2
Phalaris canariensis	T	O	80.0
Phaseolus coccineus	T	S	44.4
Phaseolus coccineus	T	R	79.1
Phaseolus mungo	T	S	27.0
Raphanus sativus	T	W	38.1
Raphanus sativus	T	S	63.6
Raphanus sativus	T	O	93.4
Reseda luteola	T	S	22.5
Rhamnus frangula	T	S	34.2
Rhamnus frangula	T	R	39.5
Rheum officinale	T	S	100.0
Rheum palmatum	T	W	20.2
Rheum rhabarbarum	T	S	33.8
Rianus communis	T	S	20.9
Ribes nidigrolaria	T	W	44.5
Ribes nidigrolaria	T	V	53.1
Ribes nigrum	T	S	40.7
Ribes nigrum L.	T	W	50.0
Ribes nigrum L.	T	V	60.1
Ribes sativam syme	T	W	47.9
Ribes Sativum	T	R	48.2
Ribes Silvestre	T	V	26.3
Ribes Silvestre	T	W	100.0
Ribes uva-crispa	T	O	57.5
Rosa rugosa	T	S	27.8
Rosa rugosa thunb.	T	W	37.5
Rosa rugosa thunb.	T	V	45.7
Rosmarinum officinalis	T	R	44.2
Rosmarinum officinalis	T	W	65.9
Rubus canadensis	T	S	45.5
Rubus idaeus	T	W	31.4
Rubus idaeus	T	V	57.2
Rubus ideaus	T	S	28.5
Rubus ideaus	T	O	38.0
Rubus occidentalis	T	O	21.4
Rubus occidentalis	T	S	36.5
Rubus occidentalis	T	R	60.2
Rumes scutatus	T	O	84.5
Rumex crispus linné	T	O	52.5
Rumex crispus linné	T	R	100.0
Rumex patientia	T	O	23.1
Rumex patientia	T	S	65.8
Ruta graveolens	T	S	37.2
Sabal serrulata syn. Serenoa repens	T	V	34.4
Sabal serrulata syn. Serenoa repens	T	S	44.6
Salix purpurea	T	R	67.8
Salvia (elegens)	T	O	51.1
Sambucus canadensis	T	S	44.8

Table 4 11
MMP-9

Prunus cerasus	T	V	30.1
Prunus persica	T	W	26.6
Prunus persica	T	V	38.5
Prunus spp	T	S	24.0
Prunus spp	T	V	49.1
Psidium guajaba	T	V	22.5
Psidium guajaba	T	W	44.3
Psidium guajaba	T	O	95.4
Psidium spp	T	S	36.6
Psidium spp	T	W	47.6
Psidium spp	T	O	87.6
Pteridium aquilinum	T	R	22.0
Punica granatum	T	V	52.1
Pyrus communis	T	V	39.5
Pyrus pyrifolia	T	W	33.7
Raphanus raphanistrum	T	O	24.5
Raphanus raphanistrum	T	S	44.8
Raphanus raphanistrum	T	S	46.1
Raphanus sativus	T	V	25.4
Raphanus sativus	T	R	32.1
Solanum melogena	T	O	21.9
solanum melogena	T	V	26.1
Solanum melogena	T	R	34.0
Solanum melogena	T	S	67.1
Solanum Tuberosum	T	O	68.6
Solidago canadensis	T	S	48.4
Solidago sp	T	R	31.4
Solidago virgaurea	T	S	56.2
Sorghum caffrorum	T	O	23.3
Sorghum dochna bicolor gr technicum	T	W	20.8
Sorghum dochna Snowdrew	T	S	21.4
Sorghum dochna Snowdrew	T	O	27.7
Spinacia oleracea	T	V	25.0
Spinacia oleracea	T	W	32.1
Spinacia oleracea	T	S	47.6
Spinacia oleracea	T	O	63.1
Stachys affinis	T	R	31.7
Stachys affinis	T	O	100.0
Stachys byzantina	T	W	30.9
Stipa capillata L.	T	R	20.1
Symphytum officinale	T	S	24.1
Tanacetum cinerarifolium	T	O	24.2
Tanacetum cinerarifolium	T	R	84.4
Tanacetum vulgare	T	R	25.7
Tanacetum vulgare	T	S	75.6
Taraxacum officinale (Red ribe)	T	S	21.1
Tepary	T	R	56.7
Teucrium chamaedrys L.	T	R	27.3
Thalpsi arvense	T	S	61.4
Thymus fragantissumus	T	R	100.0
Thymus herba-barona	T	W	22.0
Thymus pseudolanuginosus	T	R	36.8
Thymus pseudolanuginosus	T	S	37.1
Thymus serpyllum	T	S	26.0
Thymus serpyllum	T	W	42.7
Thymus X citriodorus	T	O	22.7
Tiarella cordifolia	T	R	100.0
Tragopogon porrifolius	T	V	26.8
Tragopogon porrifolius	T	O	28.4
Tragopogon porrifolius	T	S	42.1
Tragopogon sp.	T	O	20.3
Tragopogon sp.	T	S	32.0
Tragopogon sp.	T	W	66.3
Sambucus canadensis	T	O	72.4
Sambucus canadensis L.	T	W	67.8
Sambucus ebulus	T	V	44.3
Sanguisorba officinalis	T	R	100.0
Santolina	T	R	37.9
Satureja montana	T	S	20.0
Satureja montana	T	O	21.3
Satureja repandra	T	S	36.3
Scorzorera hipanica	T	R	27.1
Scorzorera hipanica	T	S	31.7
Scuttellaria lateriflora	T	S	44.3
Secale cereale	T	S	24.2
Secale cereale	T	W	31.1
Sechium edule	T	S	37.8
Sesamum indicum	T	S	59.2
Setaria italica	T	W	33.0
Silybum marianum	T	O	92.4
Sium sisarum	T	O	32.7
Sium sisarum	T	S	33.1
Sium sisarum	T	O	81.3
Vaccinium angustifolium	T	R	34.6
Vaccinium angustifolium	T	O	59.6
Vaccinium angustifolium	T	R	65.7
Vaccinium macrocarpon	T	O	30.2
Vaccinium macrocarpon	T	S	39.0
Vaccinium macrocarpon	T	S	56.9
Vaccinum macrocarpon	T	V	39.2
Vaccinum macrocarpon	T	W	42.3
Veratrum viride	T	O	20.5
Veratrum viride	T	S	33.1
Verbascum thapsus	T	S	43.1
Verbascum thapsus	T	O	70.2
Veronica officinalis	T	O	20.5
Viburnum trilobum Marsh.	T	S	40.6
Vicia faba	T	R	61.5
Vicia sativa	T	R	30.1
Vigna angularia	T	R	32.6
Vigna angularia	T	S	64.2
Vigna unguiculata	T	R	32.4
Vigna unguiculata	T	O	47.4
Vigna unguiculata	T	S	51.0
Vinca minor	T	S	21.3
Vitis sp.	T	V	28.3
Vitis sp.	T	O	29.4
Vitis sp.	T	S	45.4
Vitis sp.	T	V	50.7
Vitis sp.	T	W	61.6
Vitis sp.	T	R	100.0
Weigela coracensis	T	W	35.5
Withania somnifera	T	S	35.5
Xanthium sibiricum	T	S	38.6
Xanthium strumarium	T	S	33.5
Zea mays	T	S	37.1
Zea mays	T	O	65.5
Zingiber officinale	T	S	20.1
Zingiber officinale	T	W	58.9
Zingiber officinale	T	O	75.9

Table 4
MMP-9

Trichosanthes kirilowii	T	O	66.5
Trifolium incarnatum	T	R	47.9
Trifolium repens	T	R	81.7
Trigonella foenum graecum	T	S	39.6
Triticale sp.	T	O	64.1
Triticum aestivum	T	W	24.5
Triticum aestivum	T	S	29.4
Triticum furgidumm	T	S	35.8
Triticum spelta	T	S	34.7
Tropaeolum majus	T	O	90.3
Tropaeolum malus	T	W	20.1
Tsuga can0adensis	T	O	21.5
Tsuga can0adensis	T	W	64.4
Tsuga diversifolia	T	O	45.9
Tsuga diversifolia	T	W	100.0
Tsuga F. macrophylla	T	W	28.1
Typha latifolia L.	T	S	30.6
Urtica dioica	T	O	31.4
Urtica dioica	T	R	36.9
Urtica dioica	T	S	41.7
Vaccinium angustifolium	T	V	25.2

Table 5
Cath B

1

Nom latin	Stress	Extrait	Inhibition (%)	Nom latin	Stress	Extrait	Inhibition (%)
Achillea millefolium	A	O	61.9	Cichorium intybus	A	R	100.0
Achillea tomentosa	A	O	60.8	Citrullus lanatus	A	O	24.4
Aconitum	A	O	38.6	Convallaria maialis	A	O	57.0
Aconitum napellus	A	O	61.1	Coriandrum sativum	A	R	20.8
Alchemilla mollis	A	R	26.7	Cryptotaenia canadensis	A	O	20.4
Allium	A	R	43.0	Cucumis Anguria	A	O	26.8
Allium cepa gr. Cepa	A	O	49.9	Cucumis sativus	A	R	45.6
Allium cepa gr. Cepa	A	O	70.1	Curburbita pepo	A	O	30.8
Allium cepa gr. Cepa	A	R	45.8	Daucus carota	A	R	68.8
Allium sativum	A	O	25.6	Daucus carota	A	O	20.3
Allium Tuberosum	A	O	91.5	Daucus carota	A	R	72.5
Allium Tuberosum	A	O	75.0	Daucus carota	A	O	22.6
Allium victorialis	A	O	31.1	Daucus carota	A	O	25.6
Amaranthus gangeticus	A	O	26.1	Daucus carota	A	R	65.9
Amaranthus gangeticus	A	O	29.0	Daucus carota	A	R	77.3
Amelanchier canadensis	A	R	28.7	Daucus carota	A	R	41.6
Anthemis tinctoria	A	O	26.8	Dirca palustris	A	R	100.0
Anthemis tinctoria	A	R	32.4	Eruca vesicaria	A	O	41.4
Anthoxanthum odoratum	A	O	24.9	Filipendula rubra	A	R	65.0
Apium graveolens	A	O	31.1	Forsythia intermedia	A	R	100.0
Apium graveolens	A	O	20.6	Forsythia x intermedia	A	R	100.0
Aralia cordata	A	R	52.3	Geum rivale	A	O	26.4
Arctium lappa	A	O	33.7	Glycyrrhiza glabra	A	R	86.8
Arctium lappa	A	R	33.0	Heliotropium arborescens	A	O	29.5
Aronia melanocarpa (Michx.) Ell.	A	R	41.2	Humulus Lupulus	A	O	65.4
Aronia melanocarpa (Michx.) Ell.	A	O	21.6	Humulus Lupulus	A	R	100.0
Asarum europaeum	A	O	24.9	Hylotelephium	A	R	23.7
Athaea officinalis	A	O	57.7	Hypericum henryi	A	R	44.4
Athyrium asperum	A	O	27.3	Iberis sempervirens	A	O	84.6
Atropa belladonna	A	O	37.7	Jeffersonia diphylla	A	O	35.4
Begonia convolvulacea	A	O	26.0	Ligularia dentata	A	O	30.3
Begonia eminii	A	O	34.2	Lonicera ramosissima	A	R	48.7
Begonia glabra	A	O	38.9	Miscanthus sacchariflorus	A	O	50.9
Begonia Hannii	A	O	52.9	Nicotiana tabacum	A	O	40.0
Begonia polygonoides	A	O	67.3	Nicotiana tabacum	A	O	56.8
Berberis vulgaris	A	O	54.6	Nicotiana tabacum	A	O	55.2
Beta vulgaris	A	R	39.9	Nigella sativa	A	O	40.3
Beta vulgaris	A	R	30.4	Origanum majorana	A	O	49.7
Beta vulgaris	A	O	61.9	Origanum vulgare	A	O	67.0
Beta vulgaris	A	O	43.0	Origanum vulgare	A	O	39.9
Beta vulgaris	A	R	91.0	Panax quinquefolius L.	A	O	24.0
Beta vulgaris	A	O	46.7	Pastinaca sativa	A	R	33.5
Beta vulgaris	A	R	65.3	Petroselinum crispum	A	O	70.2
Beta vulgaris	A	R	33.4	Peucedanum cervaria	A	O	21.5
Beta vulgaris	A	O	54.3	Phaseolus Vulgaris	A	O	67.9
Beta vulgaris	A	O	38.2	Philadelphus coronarius	A	O	24.0
Beta vulgaris	A	R	55.9	Physostegia virginiana	A	O	56.9
Beta vulgaris	A	R	28.5	Phytolacca americana	A	O	100.0
Beta vulgaris	A	O	40.1	Plantago major	A	O	31.2
Beta vulgaris spp. Maritima	A	O	33.4	Plectranthus fruticosus	A	O	32.1
Brassica juncea	A	O	21.3	Polygonum pennsylvanicum	A	R	70.1
Brassica Oleracea	A	O	27.5	Pulmonaria saccharata	A	O	31.1
Brassica Oleracea	A	O	48.2	Raphanus sativus	A	O	21.5
Brassica rapa	A	O	20.8	Raphanus sativus	A	O	50.5
Calendula officinalis	A	O	35.6	Raphanus sativus	A	O	58.9
Camellia sinensis syn. Thea sinensis	A	R	24.4	Ribes nigrum L.	A	O	53.1
Cana edulis	A	R	100.0	Rubus Allegheniensis	A	O	56.7
Capsicum annuum	A	O	25.0	Rubus ideaus	A	R	89.0

Table 5 2
Cath B

Capsicum frutescens	A	O	29.6		Rumex crispus linné	A	R	65.2
Chrysanthemum balsamita	A	O	89.3		Salvia elegens	A	O	32.6
Chrysanthemun balsamina	A	O	55.0		Salvia nemorosa	A	O	26.2
Chrysanthemun coronarium (Chp Suey)	A	O	30.1		Salvia officianalis	A	O	26.3
Chrysanthemun coronarium (Chp Suey)	A	O	36.4		Salvia sclarea	A	R	51.6
Salvia sclarea	A	O	21.5		Daucus carota	G	O	27.2
Saponaria officinalis	A	O	68.5		Dirca palustris	G	R	100.0
Satureja montana	A	O	47.6		Echinacea purpurea	G	O	22.9
Scorzonera hispanica	A	O	29.9		Equisetum hyemale	G	O	100.0
Sesamum indicum	A	O	84.8		Erigeron canadensis	G	O	73.3
Solanum dulcamara	A	O	51.3		Erigeron speciosus (Lindl.) D.C.	G	O	22.9
Solidago canadensis	A	O	95.3		Eruca vesicaria	G	O	29.2
Solidago hybrida	A	O	94.5		Erysimum perofskianum Fish. S.	G	O	89.8
Solidago hybrida	A	O	99.5		Fenouil bronze	G	R	23.7
Solidago sp ?	A	O	60.9		Filipendula rubra	G	R	93.2
Stellaria graminea linné	A	O	40.2		Filipendula rubra	G	R	100.0
Tamarindus indica	A	O	59.2		Filipendula ulmaria	G	O	20.5
Taraxacum officinale	A	O	88.6		Filipendula vulgaris	G	O	26.2
Thalictrum aquilegiifolium	A	O	65.2		Forsythia intermedia	G	R	100.0
Thalictrum Aquilegiifolium	A	O	44.5		Forsythia x intermedia	G	R	100.0
Thuja occidentalis	A	O	50.6		Galium odoratum	G	O	21.0
Thymus praecox subsp arctitus	A	O	23.9		Gaultheria hispidula (L.) Muhl	G	R	39.3
Tiarella	A	R	34.4		Gaultheria procumbens	G	R	43.4
Vaccinum augustifolium	A	R	67.2		Geum rivale	G	O	21.7
Vaccinum macrocarpon	A	R	37.1		Glycine max	G	O	64.2
Vitia sp.	A	R	93.7		Glycyrrhiza glabra	G	R	53.4
Xanthium strumarium	A	O	83.2		Hamamelis virginiana	G	R	88.4
Yucca filamentosa	A	O	34.5		Heliotropium arborescens	G	O	23.0
Zea mays	A	O	29.7		Humulus lupulus	G	R	100.0
Zea mays	A	O	93.2		Humulus lupulus	G	O	90.2
Achillea tomentosa	G	O	41.0		Hydrastis canadensis	G	O	30.9
Adiantum tenerum	G	R	30.2		Hylotelephium	G	R	43.8
Alcea rosea	G	O	37.7		Hypericum henryi	G	R	50.3
Alchemilla mollis	G	R	32.8		Iberis sempervirens	G	O	87.7
Allium schoenoporasum	G	O	49.3		Lathyrus sativus	G	R	25.9
Allium tuberosum	G	O	79.1		Ligularia dentata	G	O	31.5
Allium tuberosum	G	O	77.4		Lunaria annua	G	O	59.7
Allium victorialis	G	O	45.5		Lythrum salicaire	G	R	33.1
Althaea officinalis	G	O	67.2		Melissa officinalis	G	O	27.6
amaranthus gangeticus	G	O	23.5		Miscanthus sacchariflorus	G	O	30.7
Anaphalis margaritacea	G	R	34.7		Nicotiana rustica	G	O	54.8
Angelica dahurica	G	R	27.9		Nicotiana tabacum	G	O	36.2
Anthemis nobilis	G	O	42.3		Nigella sativa	G	O	40.3
Apium graveolens	G	O	25.7		Origan	G	O	98.8
Apium graveolens	G	O	27.4		Origanum majorana	G	O	48.9
Arctostaphylos uva-ursi	G	R	94.5		Panax quinquefolius L.	G	O	21.1
Aronia melanocarpa	G	R	74.5		Panicum miliaceum	G	R	100.0
Aronia melanocarpa	G	O	21.3		Passiflora caerula	G	O	66.2
Aronia melanocarpa (Michx.) Ell.	G	R	79.9		Petroselinum crispum	G	O	65.0
Aronia melanocarpa (Michx.) Ell.	G	R	28.3		Phaseolus vulgaris	G	R	40.3
Asarum europaeum	G	O	55.4		Physostegia virginiana	G	O	74.0
Atropa belladonna	G	O	58.9		Phytolacca americana	G	O	100.0
Begonia eminii	G	O	24.7		Plantago major	G	O	60.9
Begonia glabra	G	O	42.9		Plectranthus fruticosus	G	O	29.2
Begonia manii	G	O	32.1		Polygonum aviculare linné	G	R	45.6
Begonia polygonoides	G	O	38.2		Pongamia pinnata	G	O	41.7
Berberis vulgaris	G	O	42.3		Pulmonaria officinalis	G	O	36.9
Beta vulgaris	G	R	75.3		Pulmonaria saccharata	G	O	24.7
Beta vulgaris	G	O	28.7		Raphanus sativus	G	O	38.9
Beta vulgaris	G	O	21.7		Raphanus sativus	G	O	86.4

Table 5 3
Cath B

Beta vulgaris	G	R	40.0		Rhus aromatica	G	O	49.1
Beta vulgaris spp. Maritima	G	O	31.4		Ribes nigrum L.	G	O	20.6
Betula glandulosa	G	R	38.5		Rubus ideaus	G	R	56.9
Calendula officinalis	G	O	36.2		Rubus occidentalis	G	R	61.3
Capsicum annus	G	O	49.9		Saponaria officinalis	G	O	48.3
Chrysanthemum balsamita	G	O	100.0		Sarriette vivace	G	O	44.6
Chrysanthemun balsamina	G	O	33.1		Satureja repandra	G	O	72.3
Cynara scolymus	G	O	51.9		Sesamum indicum	G	O	46.8
Daucus carota	G	O	81.3		Sidalcea	G	O	55.2
Silene vulgaris	G	O	35.5		Aubépine, hawthorne	T	R	72.7
Solanum dulcamara	G	O	56.9		Begonia convolvulacea	T	O	32.1
Solidago canadensis	G	O	99.8		Begonia eminii	T	O	40.4
Solidago canadensis	G	O	100.0		Begonia glabra	T	O	84.3
Solidago sp ?	G	O	71.8		Begonia manii	T	O	64.2
Sorghum caffrorum	G	O	34.5		Berberus vulgaris	T	O	35.4
Tamarindus indica	G	O	65.4		Beta vulgaris	T	O	34.1
Taraxacum officinale	G	O	82.7		Beta vulgaris	T	R	86.7
taraxacum officinale	G	O	42.7		Beta vulgaris	T	O	23.8
Tetradenia riparia	G	O	32.5		Beta vulgaris	T	R	79.4
Thalictrum aquilegiifolium	G	O	62.1		Beta vulgaris	T	O	34.2
Thuja occidentalis	G	O	57.7		Beta vulgaris	T	R	20.8
Thymus vulgaris "Argenteus"	G	O	40.7		Beta vulgaris	T	R	37.0
Tiarella	G	R	39.0		Beta vulgaris spp. Maritima	T	R	83.6
Tropaeolum majus	G	O	36.6		Betula glandulosa	T	R	62.5
Tussilago farfara	G	O	26.8		Borago officinalis	T	O	23.5
Vaccinium angustifolium	G	R	26.4		Brassica Napus	T	O	27.6
Vaccinium angustifolium	G	R	89.1		Brassica oleracea	T	O	21.8
Vaccinum macrocarpon	G	R	33.9		Brassica oleracea	T	O	22.3
Vitia sp.	G	R	100.0		Butomus umbellatus	T	O	20.8
Vitia sp.	G	R	90.9		Canna edulis	T	R	100.0
Vitis sp.	G	O	37.1		cannelle	T	R	99.5
Achillea millefolium	T	O	44.1		Carica papaya	T	R	100.0
Aconitum napellus	T	O	27.4		Chrysanthemum balsamita	T	O	89.3
Aesculus hippocastanum	T	R	84.2		Chrysanthemum parthenium	T	R	44.6
Aesculus hippocastanum	T	O	47.3		chrysanthemun coronarium (Chp Suey)	T	O	28.7
Alcea rosea "Nigra"	T	O	24.3		chrysanthemun coronarium (Chp Suey)	T	O	59.2
Alchemilla mollis	T	R	24.9		Citrus paradisi	T	R	100.0
Allium ascalonicum	T	O	31.1		Citrus sinensis	T	R	100.0
Allium cepa gr. Cepa	T	O	39.4		Cocos nucifera	T	R	100.0
Allium cepa gr. Cepa	T	R	23.2		Cocos nucifera	T	O	71.9
Allium cepa gr. Cepa	T	O	45.5		Convallaria majalis	T	O	67.1
Allium fistulosum	T	O	21.9		Corchorus olitorius	T	R	26.0
Allium grande	T	O	39.5		Crataegus sanguinea	T	O	33.1
Allium tuberosum	T	O	26.6		Cryptotaenia canadensis	T	R	23.1
Allium tuberosum	T	O	33.1		Cucumis anguria	T	O	26.4
Allium tuberosum	T	O	72.3		Cucumis sativus (Fanfare)	T	O	25.7
Allium tuberosum	T	R	22.6		Cydonia oblonga	T	R	23.6
Allium victorialis	T	O	42.3		Datura stramonium	T	O	61.4
Alpinia oficinarum	T	O	57.4		Daucus carota	T	R	21.1
Alpinia oficinarum	T	R	88.9		Diospiros Kaki	T	R	100.0
Althacea officinalis	T	O	51.5		Echinacea purpurea	T	O	27.8
Althaea officianalis	T	O	25.2		Eriobotrya japonica	T	R	25.2
Amelanchier canadensis	T	O	20.8		Eruca vesicaria	T	O	34.5
Amelanchier canadensis	T	R	42.1		Erysimum perofskianum Fish. S.	T	O	91.0
Amsonia tabernaemontana	T	O	30.2		Fragaria x ananassa	T	R	37.5
Ananas comosus	T	R	36.2		Fucus vesiculosis	T	R	87.1
Anaphalis margaritacea	T	R	33.9		Fumaria officinalis	T	O	44.4
Angelica dahurica	T	R	40.7		Gaultheria procumbens	T	R	74.8
Angelica sinensis syn. A. polymorpha	T	O	91.0		Gentiana macrophylla	T	O	44.5
Anthriscus cerefolium	T	R	23.3		Glyceria maxima	T	O	37.6

Table 5 4
Cath B

Anthriscus cerefolium	T	O	21.7		Glycine max Envy	T	O	40.3
Aralia cordata	T	R	44.1		Glycyrrhiza glabra	T	R	37.7
Aronia melanocarpa	T	R	33.1		Hamamelis virginiana	T	R	78.3
Aronia melanocarpa	T	R	100.0		Helichrysum angustifolium	T	R	21.8
Aronia melanocarpa (Michx.) Ell.	T	R	35.0		Heliotropium arborescens	T	O	26.8
Aronia prunifolia	T	R	50.4		Humulus lupulus	T	R	84.7
Artemisia draculus	T	O	42.5		Humulus lupulus	T	O	39.2
Asarum europaeum	T	O	39.4		Humulus lupulus	T	O	100.0
Asclepias incarnata L.	T	O	48.7		Humulus lupulus	T	R	100.0
Asclepias tuberosa	T	O	21.5		Hydrastis canadensis	T	I	42.7
Asctinidia chinensis	T	O	24.9		Hypericum henryi	T	R	51.8
Atriplex hortensis	T	O	22.4		Hypericum perforatum	T	O	52.3
Atropa belladonna	T	O	94.1		Hypomyces lactiflorum	T	O	30.1
Iberis sempervirens	T	O	90.8		Silene vulgaris	T	O	51.3
Jeffersonia diphylla	T	O	43.0		Solidago hybrida	T	O	92.8
Juglans nigra	T	R	66.7		Solidago Hybrida	T	O	100.0
Kochia scoparia (L.) Schrad.	T	O	38.4		Solidago Hybrida	T	R	100.0
Krameria Triandra	T	R	63.6		Solidago sp ?	T	O	39.6
Lentinus edodes	T	R	100.0		Tamarindus indica	T	O	64.2
Lentinus edodes	T	R	26.2		Tanacetum balsamita	T	O	100.0
Ligularia dentata	T	O	34.9		Tanacetum vulgare	T	O	23.3
Ligustrum vulgare	T	O	29.5		Taraxacum officinale	T	O	90.9
Lunaria annua	T	O	72.3		Taraxacum officinale (Red ribe)	T	O	34.5
Lunaria annua	T	R	51.1		Thuja occidentalis	T	O	37.6
Lupinus polyphyllus lindl.	T	O	47.4		Thymus serpyllum	T	O	20.6
Lychnis chalcedonica	T	O	34.4		Tiarella	T	R	35.6
Lythrum salicaire	T	R	53.8		Tragopogon sp.	T	R	21.1
Mangifera indica	T	R	100.0		Trigonella foenum graecum	T	R	97.3
Mangifera indica	T	O	29.3		Tropaeolum majus	T	O	58.8
Nigella sativa	T	O	26.1		Tropaeolum majus	T	R	28.6
Nil	T	O	73.6		Tropaeolum majus	T	O	36.7
Nil	T	R	25.4		Tsuga diversifolia	T	R	64.0
Nil	T	R	24.6		Vaccinium angustifolium	T	R	72.2
Nil	T	R	49.8		Vaccinium angustifolium	T	R	50.7
Nil	T	O	43.6		Vaccinium macrocarpon	T	R	52.6
Nil	T	R	28.4		Vitia sp.	T	O	35.1
Optunia sp.	T	R	100.0		Vitia sp.	T	R	98.9
Panax quinquefolius L.	T	O	27.4		Vitis sp.	T	R	32.6
Passiflora caerula	T	O	39.8		Weigela coracensis	T	R	24.6
Pastinaca sativa	T	O	20.5		Zea mays	T	R	100.0
Perroselinum crispum	T	O	60.9		Zea mays	T	R	48.1
Phaseolus vulgaris	T	O	37.5					
Physostegia virginiana	T	O	64.2					
Phytolacca americana	T	O	51.9					
Phytolacca americana	T	O	100.0					
Plectranthus fruticosus	T	O	23.4					
Polygonatum odoratum	T	O	100.0					
Polygonium chinense	T	R	33.6					
Pontederia cordata	T	O	26.2					
Portulacea oleracea	T	O	20.7					
Primula veris	T	O	58.2					
Prunus persica	T	R	100.0					
Prunus persica (hybride de la pêche)	T	R	100.0					
Pulmonaria officinalis	T	O	22.8					
Punica granatum	T	R	100.0					
Pyrus pyrifolia	T	R	22.4					
Radix Paeonia rubra	T	O	39.8					
Rahmnus frangula	T	R	25.3					
Raphanus sativus	T	O	45.8					
Rhus trilobata	T	O	20.2					

Table 5
Cath B

Ribes uva-crispa	T	R	34.2					
Rosa Rugosa "Alba"	T	O	45.4					
Rubus idaeus	T	R	31.2					
Rubus idaeus L.	T	O	42.7					
Rubus ideaus	T	R	74.2					
Rubus occidentalis	T	R	68.1					
Rumex crispus linné	T	R	37.9					
Salvia nemorosa	T	O	38.2					
Sambucus canadensis	T	O	27.5					
Sambucus nigra	T	O	30.8					
Sanguisorba minor	T	R	78.3					
Saponaria officinalis	T	O	68.7					
Saponaria officinalis L.	T	O	44.2					
Satureja hortensis	T	O	62.1					
Sechium edule	T	O	34.4					
Sesamum indicum	T	O	78.6					
Sidalcea	T	O	42.9					

Table 6 1
Cath D

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Agastache foeniculum	A	O	91.6		Citrullus lanatus	A	R	35.9
Agropyron cristatum	A	O	24.5		Citrullus lanatus	A	O	76.5
Agropyron repens	A	O	75.2		Coix Lacryma-Jobi	A	O	20.9
Agrostis Stofonifera	A	O	94.7		Coix Lacryma-Jobi	A	O	93.2
Alchemilla mollis	A	O	39.0		Cornus canadensis	A	O	30.9
Allium sativum	A	R	100.0		Cuburbita pepo	A	O	21.9
Allium schoenoprasum	A	R	40.0		Cucumis melo	A	O	44.1
Althaea officinalis	A	O	96.5		Cucumis sativus	A	O	21.3
Amaranthus gangeticus	A	R	67.4		Cucumis sativus	A	R	33.3
Amaranthus gangeticus	A	O	74.3		Cucurbita Maxima	A	R	100.0
Amaranthus retroflexus	A	O	100.0		Cucurbita moschata	A	R	20.5
Ambrosia artemisiifolia	A	O	75.4		Cucurbita pepo	A	O	31.9
Anethum graveolens	A	O	48.7		Cucurbita pepo	A	R	40.9
Angelica archangelica	A	O	27.6		Cucurbita pepo	A	O	41.2
Anthemis nobilis	A	O	56.2		Curcuma zedoaria	A	O	26.3
Anthemis tinctoria	A	S	42.3		Cymbopogon martinii	A	O	77.8
Aralia cordata	A	R	100.0		Daucus carota	A	O	55.1
Aralia nudicaulis	A	R	44.9		Daucus carota	A	R	100.0
Arctium minus	A	O	93.2		Dipsacus sativus	A	O	21.1
Arctium minus	A	O	100.0		Elymus junceus	A	O	27.7
Aronia melanocarpa	A	O	22.8		Eschscholzia californica	A	O	44.4
Artemisia abrotanum	A	O	31.3		Foeniculum vulgare	A	O	81.8
Artemisia abrotanum	A	O	43.6		Forsythia intermedia	A	O	40.4
Artemisia absinthium	A	O	58.3		Forsythia intermedia	A	R	100.0
Artemisia Absinthium	A	O	71.4		Fragaria x ananassa	A	R	38.5
Artemisia dracunculus	A	O	70.5		Galinsoga ciliata	A	O	46.7
Artemisis Ludoviciana	A	O	74.4		Galium odoratum	A	O	21.6
Artemisis Ludoviciana	A	O	100.0		Galium odoratum	A	R	22.7
Asparagus officinalis	A	O	61.9		Gaultheria hispidula	A	R	71.9
Aster sp	A	O	100.0		Gaultheria hispidula	A	O	90.2
Aster sp	A	O	100.0		Gentiana lutea	A	R	100.0
Atropa belladonna	A	O	100.0		Glechoma hederacea	A	O	32.7
Beckmannia eruciformis	A	R	22.1		Glycine max	A	S	55.1
Beckmannia eruciformis	A	O	48.3		Glycine max	A	R	100.0
Beta vulgaris	A	R	21.2		Glycyrrhiza glabra	A	R	100.0
Beta vulgaris	A	R	100.0		Guizotia abyssinica	A	O	73.8
Beta vulgaris spp. Maritima	A	O	30.8		Hedeoma pulegioides	A	O	100.0
Betta vulgaris	A	O	100.0		Helianthus tuberosus	A	O	37.2
Brassica napus	A	R	63.6		Hordeum hexastichon	A	R	34.6
Brassica oleracea	A	R	33.3		Hordeum hexastichon	A	O	63.6
Brassica rapa	A	R	23.8		Hordeum vulgare	A	O	66.7
Brassica rapa	A	O	26.1		Hordeum vulgure subsp. Vulgare	A	O	33.3
Bromus inermis	A	O	59.6		Hypericum henryi	A	O	66.7
Calamintha nepeta	A	R	24.0		Hyssopus officinalis	A	O	100.0
Campanula rapunculus	A	O	41.6		Ipomoea Batatas	A	O	55.1
Canna edulis	A	O	100.0		Iris versicolor	A	R	24.1
Capsella bursa-pastoris	A	O	36.7		Iris versicolor	A	O	30.8
Capsicum annuum	A	R	25.8		Lathyrus sativus	A	O	20.6
Capsicum annuum	A	R	28.2		Laurus nobilis	A	O	33.3
Capsicum annuum	A	O	64.7		Levisticum officinale	A	O	87.6
Capsicum annuum	A	R	76.9		Linum usitatissimum	A	R	21.4
Capsicum frutescens	A	O	44.1		Linum usitatissimum	A	O	44.4
Carthamus tinctorius	A	O	42.9		Lolium perenne	A	O	30.9
Carum carvi	A	R	28.6		Lotus corniculatus	A	O	23.4
Chaerophyllum bulbosom	A	O	100.0		Lycopersicon esculentum	A	R	40.0
Chelidonium majus	A	R	100.0		Matricaria recutita	A	S	56.4
chenopodium bonus-henricus	A	O	54.3		Medicago sativa	A	R	20.5
Chenopodium quinoa	A	R	22.2		Melissa officinalis	A	O	100.0
Chrysanthemum coronarium	A	O	96.8		Mentha piperita	A	O	22.7

Table 6
Cath D

2

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Cichorium endivia susp. Endivia	A	R	36.0		Mentha piperita	A	R	100.0
Cichorium endivia susp. Endivia	A	O	78.4		Mentha suaveolens	A	O	53.2
Cichorium intybus	A	O	100.0		Nepeta cataria	A	O	100.0
Citrullus lanatus	A	O	22.7		Nicotiana tabacum	A	O	37.7
Citrullus lanatus	A	R	26.7		Solanum melanocerasum	A	S	44.6
Nicotiana tabacum	A	R	44.3		Solanum melanocerasum	A	R	60.0
Oenothera biennis	A	O	23.8		Solanum tuberosum	A	O	29.2
Oenothera biennis	A	O	40.0		Solidago sp	A	O	98.4
Oenothera biennis	A	R	100.0		Spinacia oleracea	A	O	40.5
Origanum vulgare	A	O	94.7		Spinacia oleracea	A	S	57.7
Panax quinquefolius	A	O	29.8		Stachys affinis	A	O	23.8
Panax quinquefolius	A	O	35.1		Stachys byzantina	A	O	96.1
Panax quinquefolius	A	O	40.4		Stellaria graminea	A	O	34.4
Pastinaca sativa	A	O	74.4		Stellaria media	A	O	24.6
Perilla frutescens	A	O	86.7		Symphytum officinale	A	O	87.7
Perilla frutescens	A	R	100.0		Symphytum officinale	A	O	100.0
Petasites japonicus	A	O	43.5		Tanacetum cinerariifolium	A	O	70.7
Petroselinum crispum	A	O	100.0		Tanacetum parthenium	A	R	40.0
Phalaris arundinacea	A	O	21.3		Tanacetum parthenium	A	O	74.7
Phalaris canariensis	A	O	22.0		Tanacetum parthenium	A	R	100.0
Phaseolus coccineus	A	O	68.8		Tanacetum vulgare	A	O	26.7
Phaseolus mungo	A	S	58.5		Tanacetum vulgare	A	R	32.7
Phaseolus mungo	A	O	100.0		Tanacetum vulgare	A	O	98.4
Phaseolus vulgaris	A	O	33.3		Tanacetum vulgare	A	O	100.0
Phaseolus vulgaris	A	O	80.3		Taraxacum officinale	A	R	22.7
Phleum pratense	A	O	20.2		Taraxacum officinale	A	O	100.0
Physalis ixocarpa	A	R	100.0		Teucrium chamaedrys	A	O	100.0
Pimpinella anisum	A	O	86.7		Thymus praecox subsp arcticus	A	O	75.6
Plantago major	A	O	99.0		Thymus praecox subsp arcticus	A	O	100.0
Plectranthus sp.	A	R	50.0		Thymus serpyllum	A	O	78.1
Plectranthus sp.	A	O	64.0		Thymus vulgaris	A	O	90.9
Polygonum aviculare	A	O	55.7		Trichosanthes kirilowii	A	O	100.0
Poterium sanguisorba	A	R	100.0		Trifolium incarnatum	A	S	76.9
Poterium Sanquisorba	A	O	23.4		Trifolium pannonicum	A	O	72.6
Prunus Tomentosa	A	O	27.6		Trifolium pratense	A	O	100.0
Raphanus Sativus	A	O	36.8		Trifolium repens	A	O	100.0
Raphanus sativus	A	R	100.0		Triticum durum	A	R	22.7
Rheun rhabarbarum	A	R	33.0		Triticum spelta	A	R	24.0
Ribes nigrum	A	R	21.1		Triticum spelta	A	O	32.4
Ribes nigrum	A	O	32.6		Typha latifolia	A	O	52.1
Ribes rubrum	A	O	24.5		Vaccinium Corymbosum	A	R	53.3
Ribes Sylvestre	A	O	21.1		Vaccinium macrocarpon	A	R	44.3
Ribes Sylvestre	A	R	30.3		Valeriana officinalis	A	O	23.1
Rosa rugosa	A	R	21.1		Verbascum thapsus	A	O	65.6
Rosa rugosa	A	O	36.6		Vitis sp.	A	O	33.7
Rosa rugosa	A	O	40.2		Vitis sp.	A	R	93.3
Rosmarinus officinalis	A	O	95.7		Zea mays	A	R	25.0
Rubus canadensis	A	R	25.8		Zea mays	A	R	50.0
Rubus canadensis	A	O	31.7		Achillea millefolium	G	O	47.7
Rubus idaeus	A	O	85.9		Agropyron repens	G	O	93.3
Rubus ideaus	A	R	66.7		Alchemilla mollis	G	O	32.1
Rumex acetosella	A	O	27.4		Allium ascalonicum	G	O	29.7
Rumex crispus	A	O	25.0		Allium sativum	G	R	100.0
Rumex Scutatus	A	O	21.3		Allium schoenoprasum	G	R	100.0
Salvia officinalis	A	O	21.3		Allium tuberosum	G	R	100.0
Salvia officinalis	A	O	85.1		Althaea officinalis	G	O	95.6
Salvia officinalis	A	R	100.0		Amaranthus caudathus	G	O	95.3
Salvia sclarea	A	O	29.9		Amaranthus gangeticus	G	O	45.7
Sanguisorba officinalis	A	O	23.1		Amaranthus retroflexus	G	O	78.3

Table 6
Cath D

3

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Sanguisorba officinalis	A	R	48.3		Ambrosia artemisiifolia	G	O	73.8
Santolina chamaecyparissus	A	O	52.9		Amelanchier alnifolius	G	O	50.5
Satureja montana	A	O	87.4		Anethum graveolens	G	O	100.0
Scorzonera hispanica	A	O	30.8		Anthemis nobilis	G	O	94.3
Secale cereale	A	R	21.2		Apium graveolens	G	O	21.9
Senecio vulgaris	A	O	42.6		Arctium minus	G	O	65.9
Sesamum indicum	A	O	27.3		Arctium minus	G	O	71.7
Silybum marianum	A	O	25.2		Arctostaphylos uva-ursi	G	O	84.8
Sium sisarum	A	O	34.4		Aronia melanocarpa	G	O	31.5
Solanum dulcamara	A	R	21.4		Foeniculum vulgare	G	O	100.0
Arrhenatherum elatius	G	S	50.8		Forsythia intermedia	G	R	100.0
Artemisia abrotanum	G	O	52.1		Forsythia x intermedia	G	O	42.1
Artemisia absinthium	G	O	59.7		Galium odoratum	G	R	63.6
Artemisia absinthium	G	O	72.9		Galium odoratum	G	O	64.7
Artemisia Ludoviciana	G	O	64.1		Gaultheria hispidula	G	R	63.4
Artemisia Ludoviciana	G	O	90.7		Gaultheria hispidula	G	O	69.6
Artemisia vulgaris	G	O	55.2		Glechoma hederacea	G	O	50.5
Artemisia vulgaris	G	O	83.3		Glechoma hederacea	G	R	100.0
Asclepias incarnata	G	O	38.9		Glycine max	G	O	27.9
Asclepias incarnata	G	O	75.6		Glycine max	G	R	100.0
Asparagus officinalis	G	R	27.8		Guizotia abyssinica	G	R	33.3
Aster sp	G	O	33.3		Guizotia abyssinica	G	O	83.6
Atropa belladonna	G	O	96.6		Helianthus annuus	G	R	100.0
Beta vulgaris	G	O	92.1		Helianthus strumosus	G	R	28.9
Beta vulgaris	G	R	100.0		Helianthus strumosus	G	O	52.2
Beta vulgaris spp. Maritima	G	R	100.0		Helianthus tuberosus	G	O	29.3
Borago officinalis	G	O	100.0		Helianthus tuberosus	G	O	54.9
Brassica napus	G	R	40.9		Helichrysum thianschanicum	G	O	30.5
Brassica oleracea	G	R	66.7		Heliotropium arborescens	G	R	29.1
Bromus inermis	G	O	38.3		Hysopus officinalis	G	O	100.0
Calamintha nepeta	G	R	25.3		Ipomoea batatas	G	O	45.8
Campanula rapunculus	G	S	50.8		Lactuca sativa	G	O	26.6
Campanula rapunculus	G	O	68.8		Lathyrus sativus	G	O	72.7
Campanula rapunculus	G	O	69.9		Lathyrus sylvestris	G	O	33.3
Canna edulis	G	S	50.8		Lathyrus sylvestris	G	R	56.8
Capsella bursa-pastoris	G	O	30.0		Lavandula angustifolia	G	R	100.0
Capsicum annuum	G	O	27.9		Lavandula angustifolia	G	O	100.0
Capsicum annuum	G	R	33.3		Lavandula latifolia	G	O	100.0
Capsicum annuum	G	R	35.9		Leonurus cardiaca	G	O	100.0
Capsicum annuum	G	R	41.0		Levisticum officinale	G	O	98.1
Capsicum annuum	G	S	43.1		Levisticum officinale	G	R	100.0
Capsicum annuum	G	O	56.9		Linum usitatissimum	G	O	42.9
Capsicum frutescens	G	O	60.8		Lolium perenne	G	O	25.5
Carthamus tinctorius	G	O	30.2		Lotus tetragonolobus	G	R	49.2
Carum carvi	G	O	28.6		Lupinus polyphyllus	G	O	33.3
Chaerophyllum bulbosum	G	O	88.9		Lycopersicon esculentum	G	O	29.5
Chrysanthemum coronarium	G	O	82.5		Lycopersicon esculentum	G	R	43.3
Cicer arietinum	G	R	31.8		Lycopersicon pimpinellifolium	G	R	100.0
Cichorium endivia subsp endivia	G	O	100.0		Malva moschata	G	O	100.0
Cichorium intybus	G	O	100.0		Medicago sativa	G	O	32.6
Circium arvense	G	S	53.8		Melissa officinalis	G	O	100.0
Circium arvense	G	O	63.3		Mentha piperita	G	O	40.3
Citrullus lanatus	G	O	40.9		Mentha suaveolens	G	O	79.2
Citrullus lanatus	G	O	56.9		Monarda didyma	G	R	100.0
Coix Lacryma-Jobi	G	O	100.0		Nepeta cataria	G	O	100.0
Cornus canadensis	G	O	20.2		Ocimum basilicum	G	O	80.5
Cornus canadensis	G	O	35.1		Oenothera biennis	G	O	41.7
Cucumis anguria	G	R	40.0		Oenothera biennis	G	R	100.0
Cucurbita maxima	G	O	31.4		Origanum majorana	G	O	67.4

Table 6
Cath D

4

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Cucurbita maxima	G	R	40.9		Origanum vulgare	G	O	100.0
Cucurbita moschata	G	O	23.0		Oxalis Deppei	G	O	22.2
Cucurbita moschata	G	R	31.8		Oxalis Deppei	G	S	44.6
Cucurbita moschata	G	S	47.7		Oxyria digyna	G	O	21.3
Cucurbita pepo	G	O	29.8		Panax quinquefolius	G	O	25.5
Cucurbita pepo	G	R	53.3		Panax quinquefolius	G	O	38.3
Cymbopogon martinii	G	O	100.0		Panicum miliaceum	G	R	83.3
Cynara scolymus	G	O	27.3		Pennisetum alopecuroides	G	R	21.5
Datura metel	G	O	54.1		Petasites japonicus	G	O	40.6
Daucus carota	G	O	28.6		Petroselinum crispum	G	O	100.0
Daucus carota	G	R	100.0		Peucedanum cervaria	G	O	42.9
Digitalis purpurea	G	R	100.0		Phaseolus mungo	G	O	100.0
Dirca palustris	G	R	24.5		Phaseolus vulgaris	G	O	54.8
Elymus junceus	G	O	38.3		Phaseolus vulgaris	G	O	67.2
Erigeron speciosus	G	O	73.7		Thymus praecox subsp arcticus	G	O	100.0
Plantago major	G	O	95.2		Thymus serpyllum	G	O	100.0
Plectranthus sp.	G	R	100.0		Thymus vulgaris	G	O	64.4
Plectranthus sp.	G	O	100.0		Thymus x citriodorus	G	O	72.7
Poa compressa	G	O	20.2		Tiarella cordifolia	G	O	92.4
Portulaca oleracera	G	O	60.0		Trifolium hybridum	G	O	29.5
Potentilla anserina	G	R	100.0		Trifolium pannonicum	G	O	54.7
Poterium sanguisorba	G	O	21.3		Trifolium pratense	G	O	92.9
Poterium sanguisorba	G	R	100.0		Trifolium repens	G	O	100.0
Prunella vulgaris	G	O	70.3		Triticum spelta	G	R	37.3
Raphanus Raphanistrum	G	O	33.3		Triticum turgidum	G	O	59.5
Raphanus Raphanistrum	G	R	80.0		Typha latifolia	G	O	23.4
Raphanus sativus	G	O	52.6		Vaccinium corymbosum	G	O	26.5
Raphanus sativus	G	R	100.0		Vaccinum angustifolium	G	O	27.7
Ribes nigrum	G	O	42.1		Vaccinum macrocarpon	G	R	33.0
Ribes Sylvestre	G	R	32.0		Valeriana officinalis	G	R	27.6
Ricinus communis	G	R	100.0		Valeriana officinalis	G	O	51.3
Rosa rugosa	G	O	52.4		Verbascum thapsus	G	O	21.3
Rosa rugosa	G	O	90.2		Vinca minor	G	O	28.6
Rosmarinus officinalis	G	O	100.0		Vitis sp.	G	R	40.0
Rubus ideaus	G	O	34.8		Vitis sp.	G	O	42.6
Rubus occidentalis	G	R	60.0		Zea mays	G	R	26.9
Rubus occidentalis	G	O	65.3		Zea mays	G	R	100.0
Rumex crispus	G	O	43.3		Perilla frutescens	T	O	96.0
Ruta graveolens	G	O	23.0		Perilla frutescens	T	R	100.0
Salvia officinalis	G	O	100.0		Abies lasiocarpa	T	O	25.6
Salvia officinalis	G	R	100.0		Agastache foeniculum	T	O	100.0
Sambucus canadensis	G	O	80.6		Agropyron cristatum	T	O	20.2
Sambucus ebulus	G	R	21.1		Agrostis alba	T	O	24.5
Sambucus ebulus	G	O	36.8		Alchemilla mollis	T	O	33.3
Sanguisorba officinalis	G	O	43.6		Alchemilla mollis	T	S	49.2
Santolina chamaecyparissus	G	O	50.6		Alchemilla mollis	T	O	66.2
Saponaria officinalis	G	O	85.6		Allium ampeloprasum	T	O	100.0
Satureja hortensis	G	R	36.8		Allium ascalonicum	T	O	29.7
Satureja hortensis	G	O	68.4		Allium ascalonicum	T	R	38.7
Senecio vulgaris	G	O	31.1		Allium cepa	T	R	100.0
Sesamum indicum	G	O	27.3		Allium tuberosum	T	R	100.0
Sium sisarum	G	O	20.8		Alpinia officinarum	T	R	50.0
Sium sisarum	G	O	47.8		Althaea officinalis	T	O	58.6
Solanum melanocerasum	G	O	23.5		Amaranthus candathus	T	R	22.9
Solanum melongens	G	O	28.6		Amaranthus candatus	T	O	93.2
solanum melongens	G	R	41.2		Amaranthus caudathus	T	O	100.0
Solidago sp	G	O	72.1		Amaranthus gangeticus	T	O	57.1
Sonchus oleraceus	G	O	95.1		Amaranthus retroflexus	T	O	100.0
Stachys Affinis	G	O	38.1		Ambrosia artemisiifolia	T	O	86.9

Table 6
Cath D

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Stachys byzantina	G	O	28.6		Amelanchier alnifolia	T	O	50.5
Stellaria graminea	G	O	39.3		Anthemis nobilis	T	O	100.0
Stellaria media	G	O	21.3		Anthriscus cerefolium	T	O	100.0
Symphytum officinale	G	R	37.8		Aralia cordata	T	R	100.0
Symphytum officinale	G	S	43.1		Arctium minus	T	O	68.3
Symphytum officinale	G	O	92.6		Aronia melanocarpa	T	O	50.0
Symphytum officinale	G	O	100.0		Aronia prunifolia	T	O	44.7
Tanacetum cinerariifolium	G	O	91.3		Arrhenatherum elatius	T	O	78.7
Tanacetum parthenium	G	R	60.0		Artemisia absinthium	T	O	58.4
Tanacetum parthenium	G	O	86.7		Artemisia dracunculus	T	R	28.6
Tanacetum vulgare	G	O	44.4		Artemisia dracunculus	T	O	86.3
Tanacetum vulgare	G	O	67.9		Artemisia Ludoviciana	T	O	48.8
Tanacetum vulgare	G	O	85.7		Artemisia vulgaris	T	O	50.0
taraxacum officinale	G	R	40.9		Artemisia vulgaris	T	O	82.8
taraxacum officinale	G	O	100.0		Asclepias incarnata	T	O	72.9
Teucrium chamaedrys	G	R	33.3		Asparagus officinalis	T	O	69.8
Teucrium chamaedrys	G	O	66.7		Aster sp	T	O	35.0
Thymus fragantissimus	G	O	24.1		Avena sativa	T	O	31.8
Thymus praecox subsp arcticus	G	R	25.0		Baptisia tinctoria	T	O	33.8
Thymus praecox subsp arcticus	G	O	92.7		Dioscorea batatas	T	S	41.5
Beta vulgaris	T	O	25.5		Dipsacus sativus	T	O	73.7
Beta vulgaris	T	O	28.6		Dirca palustris	T	O	88.5
Beta vulgaris	T	R	34.6		Eleusine coracana	T	S	49.2
Beta vulgaris	T	S	43.6		Elymus junceus	T	O	35.1
Beta vulgaris	T	O	54.5		Erigeron speciosus	T	O	67.8
Beta vulgaris	T	R	100.0		Fagopyrum esculentum	T	O	27.3
Beta vulgaris spp. Maritima	T	R	100.0		Foeniculum vulgare	T	R	80.0
Brassica nigra	T	R	45.5		Forsythia intermedia	T	O	50.9
Brassica oleracea	T	O	50.0		Forsythia x intermedia	T	O	57.9
Brassica oleracea	T	R	100.0		Fucus vesiculosus	T	O	83.7
Bromus inermis	T	O	30.9		Fucus vesiculosus	T	R	100.0
Calamagrostis arundiflora	T	O	85.6		Galinsoga ciliata	T	O	56.7
Calendula officinalis	T	O	23.7		Galium aparine	T	O	60.5
Campanula rapunculus	T	O	25.0		Galium odoratum	T	R	31.8
Canna edulis	T	O	26.3		Gaultheria hispidula	T	O	33.7
Capsella bursa-pastoris	T	O	21.7		Gaultheria procumbens	T	O	25.0
Capsicum annum	T	O	46.1		Gentiana lutea	T	O	98.1
Capsicum annuum	T	R	20.5		Gentiana macrophylla	T	O	100.0
Capsicum annuum	T	O	23.3		Glechoma hederacea	T	O	62.6
Capsicum annuum	T	R	41.0		Glycine max	T	O	26.2
Capsicum frutescens	T	O	58.8		Glycyrrhiza glabra	T	R	50.0
Carthamus tinctorius	T	O	36.5		Glycyrrhiza glabra	T	S	51.3
Carum carvi	T	O	88.6		Guizotia abyssinica	T	O	39.3
Chaerophyllum bulbosum	T	O	25.0		Guizotia abyssinica	T	R	100.0
Chaerophyllum bulbosum	T	O	95.2		Hedeoma pulegioides	T	O	100.0
Chelidonium majus	T	O	27.1		Helianthus annus	T	O	75.8
Chelidonium majus	T	R	50.0		Helianthus strumosus	T	R	55.6
Chenopodium bonus-henricus	T	O	60.0		Helianthus tuberosus	T	O	22.1
Chenopodium quinoa	T	R	31.5		Helichrysum angustifolium	T	O	96.1
Chenopodium quinoa	T	O	50.0		Helichrysum thianschanicum	T	O	70.5
Chrysanthemum coronarium	T	R	65.5		Heliotropium arborescens	T	O	83.2
Chrysanthemum coronarium	T	O	100.0		Helleborus niger	T	O	24.1
Cicer arietinum	T	R	27.3		Herba Schizonepetae	T	O	60.5
Cichorium endivia subsp endivia	T	R	27.3		Hibiscus cannabinus	T	S	52.6
Cichorium endivia subsp endivia	T	O	97.3		Hordeum vulgare	T	O	77.8
Cichorium intybus	T	O	100.0		Hydrastis canadensis	T	O	64.9
Cimicifuga racemosa	T	R	22.2		Hypericum henryi	T	O	100.0
Circium arvense	T	O	76.3		Hypericum perforatum	T	R	31.0
Citrullus lanatus	T	R	26.7		Hyssopus officinalis	T	O	100.0
Citrullus lanatus	T	O	45.5		Inula helenium	T	O	100.0

Table 6 6
Cath D

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Citrullus lanatus	T	O	62.7		Ipomoea batalas	T	O	91.5
Coix Lacryma-Jobi	T	O	77.3		Iris versicolor	T	O	35.9
Coriandrum sativum	T	O	90.0		Juniperus communis	T	O	83.8
Cornus canadensis	T	O	29.3		Krameria Triandra	T	O	25.6
Cucumis anguria	T	R	50.0		Lactuca sativa	T	O	100.0
Cucumis anguria	T	O	70.1		Lathyrus Sativus	T	R	27.3
Cucumis melo	T	R	20.5		Lathyrus Sativus	T	O	33.3
Cucumis melo	T	O	51.0		Lathyrus sylvestris	T	O	20.3
Cucumis sativus	T	O	23.4		Lathyrus sylvestris	T	R	100.0
Cucurbita maxima	T	O	50.0		Laurus nobilis	T	R	23.8
Cucurbita moschata	T	O	84.9		Laurus nobilis	T	O	26.0
Cucurbita pepo	T	R	20.5		Lavandula latifolia	T	R	100.0
Cucurbita pepo	T	O	39.2		Lavandula latifolia	T	O	100.0
Cucurbita pepo	T	S	53.8		Lens culinaris subsp culinaris	T	O	21.3
Curcuma zedoaria	T	O	24.6		Leonorus cardiaca	T	O	57.9
Cymbopogon citratus	T	O	100.0		Lepidium sativum	T	O	31.6
Cynara scolymus	T	R	33.3		Levisticum officinale	T	O	90.5
Dactilis Glomerata	T	O	20.2		Levisticum officinale	T	R	100.0
Datura metel	T	O	37.8		Linum usitatissimum	T	O	23.8
Datura stramonium	T	R	50.0		Lonicera syringantha	T	O	79.5
Daucus carota	T	R	21.1		Lotus corniculatus	T	R	46.7
Daucus carota	T	O	30.3		Lupinus polyphyllus lindl.	T	O	36.6
Daucus carota	T	O	49.3		Lycopersicon esculentum	T	R	60.0
Daucus carota	T	S	52.3		Rumex scutatus	T	O	23.0
Lycopersicon pimpinellifolium	T	R	100.0		Ruta graveolens	T	O	62.1
Malus hupehensis	T	R	100.0		Saccharum officinarum	T	O	27.0
Malva sylvestris	T	O	100.0		Salvia officinalis	T	O	92.0
Matricaria spp.	T	O	100.0		Salvia officinalis	T	O	93.3
Medicago sativa	T	O	27.7		Sambucus canadensis	T	O	42.9
Melissa officinalis	T	O	100.0		Sanguisorba officinalis	T	O	68.6
Menyanthes trifoliata	T	O	44.9		Santolina chamaecyparissus	T	O	66.7
Menyanthes trifoliata	T	R	50.0		Saponaria officinalis	T	O	36.6
Miscanthus sinensis	T	R	23.5		Saponaria officinalis	T	O	84.7
Miscanthus sinensis	T	O	24.6		Satureja montana	T	O	80.5
Nepeta cataria	T	O	78.9		Satureja repandra	T	O	47.1
Ocimum Basilicum	T	R	35.7		Senecio vulgaris	T	O	44.3
Ocimum Basilicum	T	O	100.0		Setaria italica	T	O	27.9
Oenothera biennis	T	R	100.0		Silybum marianum	T	O	31.0
Origanum vulgare	T	O	94.7		Sium sisarum	T	O	24.8
Origanum vulgare	T	R	100.0		Sium sisarum	T	R	25.5
Oxalis Deppei	T	O	21.1		Solanum dulcamara	T	R	21.4
oxyria digyna	T	O	24.6		Solanum melongena	T	R	25.8
Panax quinquefolius	T	O	39.4		Solanum melongena	T	O	34.9
Panicum miliaceum	T	R	20.8		Solanum tuberosum	T	O	38.1
Pastinaca sativa	T	O	21.3		Solidago canadensis	T	O	100.0
Pastinaca sativa	T	R	25.0		Solidago sp	T	O	73.8
Pastinaca sativa	T	R	25.0		Sonchus oleraceus	T	O	100.0
Pastinaca sativa	T	O	79.4		Sorghum durra	T	O	23.8
Pastinaca sativa	T	O	100.0		Spinacia oleracea	T	R	29.3
Petasites Japonicus	T	O	29.0		Stachys affinis	T	R	23.6
Petroselinum crispum	T	R	40.0		Stachys affinis	T	O	23.9
Peucedanum oreaselinum	T	S	55.1		Stachys affinis	T	O	50.0
Pfaffia paniculata	T	R	100.0		Stachys byzantina	T	O	41.6
Phaseolus mungo	T	O	70.2		Stellaria graminea	T	O	62.3
Phaseolus vulgaris	T	O	71.4		Stipa capillata	T	O	27.1
Phaseolus vulgaris	T	O	100.0		Symphytum officinale	T	R	28.9
Phaseolus vulgaris	T	R	100.0		Symphytum officinale	T	O	87.7
Physalis ixocarpa	T	O	25.5		Symphytum officinale	T	O	97.8
Pimpinella anisum	T	R	100.0		Tanacetum cinerariifolium	T	O	62.7

Table 6 7
Cath D

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Pimpinella anisum	T	O	100.0		Tanacetum parthenium	T	O	94.7
Pisum sativum	T	O	37.5		Tanacetum vulgare	T	R	28.9
Plantago major	T	O	100.0		Tanacetum vulgare	T	S	47.7
Plectranthus sp.	T	O	36.0		Tanacetum vulgare	T	O	75.6
Plectranthus sp.	T	R	80.0		Tanacetum vulgare	T	O	95.2
Poa pratensis	T	O	38.3		Tanacetum vulgare	T	O	100.0
Populus X petrowskyana	T	O	25.5		Taraxacum officinale	T	O	95.3
Prunella vulgaris	T	O	23.3		Thymus praecox subsp arcticus	T	R	24.4
Prunella vulgaris	T	O	88.1		Thymus praecox subsp arcticus	T	O	60.0
Raphanus raphanistrum	T	O	73.7		Thymus praecox subsp arcticus	T	O	90.0
Raphanus raphanistrum	T	R	100.0		Thymus pseudolanuginosus	T	O	83.9
Raphanus sativus	T	S	60.3		Thymus serpyllum	T	O	100.0
Raphanus sativus	T	R	100.0		Tiarella cordifolia	T	O	93.3
Reseda luteola	T	O	100.0		Tragopogon porrifolius	T	O	34.4
Rheum officinale	T	O	36.8		Tragopogon porrifolius	T	O	58.0
Ribes sativum	T	O	20.4		Trichosanthes kirilowii	T	R	25.3
Ribes Sylvestre	T	R	44.3		Trifolium pannonicum	T	O	61.1
Ricinus communis	T	R	100.0		Trifolium pratense	T	O	92.9
Rosmarinus officinalis	T	R	60.0		Trifolium repens	T	O	100.0
Rosmarinus officinalis	T	O	100.0		Triticum aestivum	T	O	29.5
Rubus canadensis	T	R	32.0		Triticum durum	T	O	100.0
Rubus canadensis	T	O	34.7		Triticum turgidum	T	O	29.7
Rubus idaeus	T	O	93.5		Ulmus americana	T	O	76.9
Rubus ideaus	T	R	100.0		Ulmus americana	T	O	81.0
Rubus occidentalis	T	O	38.6		Urtica dioica	T	R	40.9
Rubus occidentalis	T	S	52.3		Vaccinium angustifolium	T	R	26.3
Rubus occidentalis	T	R	100.0		Vaccinium angustifolium	T	O	28.3
Rumex acetosella	T	O	26.3		Vaccinium angustifolium	T	O	47.6
Rumex crispus	T	O	30.0					
Vaccinium angustifolium	T	R	100.0					
Vaccinium corymbosum	T	O	21.4					
Vaccinium macrocarpon	T	R	80.0					
Valeriana officinalis	T	O	43.6					
Vicia sativa	T	S	43.1					
Vitiis sp.	T	O	26.7					
Vitiis sp.	T	R	93.3					
Zea mays	T	R	21.2					
Zea mays	T	R	100.0					

Table 7
Cath G

1

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Achillea millefolium	A	V	40.1		Echinacea purpurea	A	W	100.0
Achillea millefolium	A	O	29.5		Filipendula rubra	A	O	20.2
Acorus calamus	A	R	68.6		Filipendula rubra	A	S	77.6
Adiantum pedatum	A	R	29.7		Foeniculum vulgare	A	R	23.3
Agastache foeniculum	A	O	36.8		Fragaria x ananassa	A	O	32.3
Agastache foeniculum	A	S	22.4		Fragaria x ananassa	A	W	100.0
Agropyron rupens	A	S	24.5		Fragaria x ananassa	A	S	100.0
Alchemilla mollis	A	W	100.0		Fragaria Xananassa	A	S	100.0
Alchemilla mollis	A	S	81.1		Frangoria x ananassa	A	W	100.0
Alchemilla mollis	A	O	51.5		Frangoria x ananassa	A	V	100.0
Alchemilla mollis	A	S	78.6		Galinsoga ciliata (Rofiresque) Blake	A	R	21.2
Alchemilla mollis	A	O	82.9		Gaultheria hispidula (L.) Muhl.	A	R	85.3
Alchemilla mollis	A	S	35.6		Gaultheria hispidula (L.) Muhl.	A	R	100.0
Alkanna tinctoria	A	O	51.6		Gaultheria procumbens	A	W	56.1
Alkanna tinctoria	A	R	100.0		Glycine Max	A	S	36.0
Allium Tuberosum	A	S	20.6		Glycine max	A	S	38.7
Althaea officinalis	A	R	21.6		Glycyrrhiza glabra	A	W	46.2
Althaea officinalis	A	S	39.6		Glycyrrhiza glabra	A	S	35.5
Ambrosia artemisiifolia linné	A	O	47.6		Glycyrrhiza glabra	A	R	100.0
Ambrosia artemisiifolia linné	A	R	38.2		Hamamelis virginiana	A	R	100.0
Amelanchier sanguinea (Pursh) DC.	A	W	29.7		Helianthus tuberosus	A	W	22.6
Angelica archangelica	A	S	68.1		Helichrysum angustifolium	A	V	82.6
Anthemis tinctoria	A	O	26.0		Heliotropium arborescens	A	O	57.3
Anthemis tinctoria	A	V	28.4		Heliotropium arborescens	A	R	57.2
Anthemis tinctorium	A	O	46.9		Hordeum vulgare	A	O	34.3
Arachis hypogaea	A	V	84.5		Hypericum henryi	A	O	30.4
Aralia nudicaulis	A	S	61.9		Hypericum perforatum	A	R	100.0
Arctostaphylos uva-ursi	A	O	25.0		Inula helenium	A	S	64.0
Arctostaphylos uva-ursi	A	R	100.0		Isatis tinctoria	A	O	94.0
Arctostaphylos uva-ursi	A	S	38.4		Laurus nobilis	A	S	49.9
Aronia melanocarpa (Michx.) Ell.	A	O	24.4		Lavendula latifolia	A	W	100.0
Aronia melanocarpa (Michx.) Ell.	A	R	27.3		Lavendula latifolia	A	V	48.7
Aronia melanocarpa (Michx.) Ell.	A	W	47.8		Leonorus cardiaca	A	R	100.0
Artemisia dracunculus sativa	A	W	32.2		Levisecum officinale	A	V	46.8
Artemisis Ludoviciana	A	O	88.8		Lolium multiflorum	A	O	34.1
Aster sp ?	A	O	47.2		Melissa officinalis	A	O	54.1
Aster sp ?	A	R	100.0		Melissa officinalis	A	W	100.0
Beta vulgaris	A	R	23.9		Melissa officinalis	A	V	80.7
Brassica napus	A	R	22.3		Melissa officinalis	A	O	100.0
Brassica napus	A	S	22.8		Mentha pulegium	A	O	29.1
Brassica nigra	A	S	47.2		Mentha spicata	A	V	47.0
Brassica rapa	A	S	46.0		Nepeta cataria	A	V	57.6
Capsella bursa-pastoris (linné) médicus	A	R	43.4		Ocrothera biennis	A	S	33.1
Chaerophyllum bulbosom	A	V	90.7		Oenothera biennis linné	A	O	47.4
Chaerophyllum bulbosom	A	W	57.4		Oenothera biennis linné	A	R	100.0
chenopodium bonus-henricus	A	R	23.7		Origanum majorana	A	S	34.6
Chichorium endivia	A	O	53.0		Origanum vulgare	A	V	65.9
Chrysanthemum leucanthemum linné	A	O	55.5		Origanum vulgare	A	W	48.2
Cicer arietinum	A	R	26.2		Origanum vulgare	A	V	70.0
Cichorium intybus	A	O	100.0		Origanum vulgare	A	W	62.9
Cichorium intybus	A	V	83.6		Origanum vulgare	A	O	68.4
Cichorium intybus	A	O	51.0		Origanum vulgare	A	V	81.9
Crataegus sp ?	A	O	100.0		Origanum vulgare	A	W	61.3
Crataegus sp ?	A	R	81.6		Origanum vulgare	A	S	21.7
Cymbopogan citratus	A	S	33.9		Oxyria digyna	A	V	40.1
Datisca cannabina	A	S	20.2		Perilla frutescens	A	V	65.0
Daucus carota	A	O	62.0		Perilla frutescens	A	W	51.9
Daucus carota	A	W	99.4		Peucedanum cervaria	A	R	28.3

Table 7 2
Cath G

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Dirca palustris	A	R	24.9		Peucedanum cervaria	A	R	45.1
Dirca palustris	A	S	47.0		Phaseolus Vulgaris	A	S	38.4
Dryopteris filix-mas	A	O	24.1		Phaseolus Vulgaris	A	S	26.3
Dryopteris filix-mas	A	R	95.7		Tanacetum vulgare "Goldsticks"	A	V	51.9
Echinacea purpurea	A	V	80.7		Taraxacum officinale	A	W	28.5
Phytolacca americana	A	S	27.8		Taraxacum officinale	A	V	82.3
Plantago coronopus	A	O	22.7		Thymus praecox subsp arctitus	A	O	43.4
Polygonum aviculare linné	A	R	76.0		Thymus pseudolanuginosus	A	V	29.7
Poterium sanguisorba	A	O	20.1		Thymus serpyllum	A	O	100.0
Poterium sanguisorba	A	R	93.1		Thymus serpyllum	A	W	73.6
Poterium sanguisorba	A	V	47.7		Thymus serpyllum	A	V	74.9
Poterium sanguisorba	A	S	36.1		Thymus vulgaris	A	O	35.6
Pteridium aquilinum	A	O	25.7		Thymus vulgaris	A	R	66.5
Pteridium aquilinum	A	R	100.0		Thymus vulgaris "Argenteus"	A	V	73.9
Ribes nidigrolaria	A	W	51.8		Triticum furgidum??	A	O	21.6
Ribes Nigrum	A	W	100.0		Vaccinum augustifolium	A	S	26.1
Ribes nigrum	A	S	33.6		Vaccinum Corymbosum	A	W	95.7
Ribes nigrum L.	A	W	58.8		Vaccinum macrocarpon	A	W	46.1
Ribes nigrum L.	A	O	21.5		Valerianella locusta	A	S	96.0
Ribes Salivum	A	R	21.4		Veronica officinalis	A	S	26.4
Ricinus communis	A	R	100.0		Viburnum trilobum Marsh.	A	W	25.0
Rosa rugosa thunb.	A	W	20.1		Vicia sativa	A	O	28.2
Rosa rugosa thunb.	A	W	100.0		Vicia villosa	A	O	34.5
Rosa rugosa thunb.	A	R	100.0		Vitia sp.	A	W	26.0
Rosmarinus officinalis	A	O	100.0		Vitia sp.	A	S	41.6
Rosmarinus officinalis	A	R	64.0		Vitia sp.	A	W	100.0
Rosmarinus officinalis	A	W	55.6		Vitia sp.	A	S	30.8
Rosmarinus officinalis	A	V	76.7		Vitia sp.	A	O	22.3
Rubus allegheniensis	A	S	32.1		Vitia sp.	A	S	28.5
Rubus canadensis	A	W	94.5		Zea Mays	A	S	32.3
Rubus canadensis	A	S	64.2		Zea Mays	A	S	34.5
Rubus idaeus	A	S	86.0		Achillea millefolium	G	W	30.6
Rubus idaeus	A	O	29.5		Achillea millefolium	G	V	71.1
Rubus idaeus	A	W	38.7		Aconitum napellus	G	R	100.0
Rubus idaeus	A	S	41.0		Acorus calamus	G	R	27.8
Rubus idaeus	A	W	100.0		Adiantum pedatum	G	R	100.0
Rubus idaeus L.	A	V	30.2		Agastache toeniculum "Snow Pike"	G	V	46.9
Rubus idaeus L.	A	W	29.4		Agastache toeniculum "Snow Pike"	G	W	71.5
Rubus idaeus L.	A	S	100.0		Alchemilla mollis	G	W	100.0
Rubus ideaus	A	R	100.0		Alchemilla mollis	G	O	52.6
Rubus ideaus	A	S	67.1		Alchemilla mollis	G	S	80.7
Rubus occidentalis	A	S	100.0		Alchemilla mollis	G	O	33.4
Rumex crispus linné	A	R	100.0		Alchemilla mollis	G	S	38.7
Salvia elegens	A	W	69.7		althaea officinalis	G	R	27.5
Salvia officinalis	A	W	100.0		althaea officinalis	G	S	36.9
Salvia officinalis	A	V	58.0		Ambrosia artemisiifolia linné	G	O	48.4
Salvia officinalis	A	O	100.0		Ambrosia artemisiifolia linné	G	R	36.0
Salvia officinalis	A	R	39.9		Amelanchier sanguinea (Pursh) DC.	G	W	46.5
Salvia officinalis	A	V	45.7		Angelica archangelica	G	S	39.1
Salvia officinalis	A	W	65.4		Arachis hypogaea	G	V	81.8
Salvia sclarea	A	W	29.1		Aralia nudicaulis	G	S	44.9
Santolina	A	W	65.5		Arctium minus (Hill) Bernhardi	G	O	35.6
Satureja montana	A	V	72.2		Arctostaphylos uva-ursi	G	S	59.9
Satureja montana	A	W	100.0		Aronia melanocarpa (Michx.) Ell.	G	W	28.4
Satureja montana	A	O	90.5		Artemisia Ludoviciana	G	O	66.0
Satureja montana	A	V	28.9		Aster sp ?	G	O	51.8
Scuttellaria lateriflora	A	S	23.7		Aster sp ?	G	R	100.0
Sonchus oleraceus L.	A	O	25.9		Beta vulgaris	G	R	26.5

Table 7
Cath G

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Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Sorghum dochna bicolor	A	O	25.6		Brassica napus	G	R	32.9
Sorghum durra (Stapif)	A	O	46.9		Brassica napus	G	S	33.5
Symphytum officinale	A	O	99.4		Brassica oleracea	G	S	100.0
Symphytum officinale	A	O	97.8		Calamintha nepeta	G	V	51.5
Tanacetum cinerarifolium	A	W	28.2		Calendula officinalis L.	G	O	26.7
Tanacetum parthenium	A	W	34.8		Canna edulis	G	O	20.6
Tanacetum vulgare	A	W	80.0		Chaerophyllum bulbosum	G	O	37.0
Tanacetum vulgare	A	V	53.8		Chaerophyllum bulbosum	G	V	88.6
Tanacetum vulgare	A	O	35.9		N	G	R	34.8
Tanacetum vulgare	A	R	68.8		Nepeta cataria	G	V	38.4
Chaerophyllum bulbosum	G	W	26.5		Ocimum basilicum	G	W	20.4
Chichorium endivia	G	S	25.2		Ocimum basilicum	G	O	89.9
Chrysanthemum leucanthemum linné	G	O	44.2		Ocimum basilicum	G	V	31.3
Cicer arietinum	G	R	26.1		Ocimum basilicum	G	W	82.3
Cichorium endivia	G	O	23.7		Oenothera biennis linné	G	O	62.8
Cichorium intybus	G	O	100.0		Oenothera biennis linné	G	R	100.0
Cichorium intybus	G	V	79.2		Oenothera biennis linné	G	R	100.0
Cichorium intybus	G	O	82.5		Oenothera biennis Linné	G	S	100.0
Crataegus sp ?	G	W	27.9		Origanum vulgare	G	V	67.1
Cynara scolymus	G	O	66.3		Origanum vulgare	G	V	65.5
Dirca palustris	G	R	28.8		Origanum vulgare	G	W	58.1
Dirca palustris	G	S	85.2		Origanum vulgare	G	V	70.5
Dryopteris filix-mas	G	R	100.0		Origanum vulgare	G	W	34.5
Echinacea purpurea	G	V	84.2		Origanum vulgare	G	V	60.1
Echinacea purpurea	G	O	83.2		Origanum vulgare	G	O	100.0
Erigeron speciosus (Lindl.) D.C.	G	O	46.1		Origanum vulgare	G	S	28.5
Fagopyrum esculentum	G	O	27.5		Origanum vulgare	G	O	83.7
Filipendula rubra	G	S	59.6		Origanum vulgare	G	S	22.1
Galinsoga ciliata (Rofiresque) Blake	G	R	20.5		Oxyria digyna	G	V	57.7
Galium odoratum	G	R	56.8		Perilla frutescens	G	V	75.8
Gaultheria hispidula (L.) Muhl	G	O	100.0		Peucedanum cervaria	G	R	37.5
Glycine max	G	O	22.8		Peucedanum cervaria	G	R	25.3
Glycyrrhiza glabra	G	S	28.4		Plantago major	G	O	31.7
Hamamelis virginiana	G	O	33.8		Plectranthus sp.	G	V	28.5
Hamamelis virginiana	G	R	100.0		Portulaca oleracera linné	G	O	37.8
Helianthus annus	G	R	26.5		Potentilla anserina	G	S	21.1
Helianthus strumosus	G	O	21.2		Poterium sanguisorba	G	V	72.1
Helianthus tuberosus L.	G	W	48.4		Poterium sanguisorba	G	S	65.9
Helichrysum angustifolium	G	W	38.1		Poterium sanquisorba	G	O	63.6
Helichrysum angustifolium	G	V	83.8		Poterium sanquisorba	G	W	28.7
Helichrysum thianschanicum Regel	G	O	61.3		Prunella vulgaris	G	O	40.7
Heliotropium arborescens	G	O	56.2		Pteridium aquilinum	G	O	25.7
Heliotropium arborescens	G	R	54.9		Pteridium aquilinum	G	R	100.0
Humulus lupulus	G	V	70.5		Raphanus Raphanistrum	G	R	42.7
Humulus lupulus	G	S	43.0		Ribes nidigrolaria	G	W	45.9
Hypericum henryi	G	O	31.0		Ribes nigrum	G	W	35.9
Hypericum perforatum	G	R	100.0		Ribes Silvestris	G	W	34.9
Inula helenium	G	W	85.3		Ribes Uva-crispa	G	S	30.5
Inula helenium	G	V	74.7		Ricinus communis	G	R	95.0
Inula helenium	G	S	37.4		Ricinus communis	G	S	48.3
Ipomea batatas	G	O	39.0		Rosa rugosa thunb.	G	W	40.3
Isatis tinctoria	G	O	100.0		Rosa rugosa thunb.	G	S	97.8
Laportea canadensis	G	O	26.9		Rosmarinus officinalis	G	O	100.0
Laurus nobilis	G	W	51.5		Rosmarinus officinalis	G	R	54.1
Laurus nobilis	G	S	100.0		Rosmarinus officinalis	G	W	77.7
Lavendula angustifolia	G	V	44.4		Rosmarinus officinalis	G	V	72.2
Lavendula latifolia	G	V	44.8		Rubus canadensis	G	S	25.3
Ledum groenlandicum	G	S	100.0		Rubus idaeus L.	G	W	31.1

Table 7
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Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Levistecum officinale	G	W	39.6		Rubus ideaus	G	S	100.0
Matricaria recutita	G	O	100.0		Rubus ideaus	G	R	37.6
Melissa officinalis	G	W	98.0		Rubus ideaus	G	O	34.8
Melissa officinalis	G	V	76.3		Rubus occidentalis	G	S	93.3
Melissa officinalis	G	R	36.6		Rubus occidentalis	G	O	22.7
Melissa officinalis	G	O	80.6		Rubus occidentalis	G	S	21.6
Mentha arvensis	G	O	83.5		Rumex crispus linné	G	R	100.0
Mentha piperita	G	O	79.0		Rumex crispus linné	G	R	100.0
Mentha piperita vulgaris	G	V	45.9		Salvia elegens	G	V	41.3
Mentha pulegium	G	O	47.0		Salvia elegens	G	W	62.9
Mentha spicata	G	V	73.9		Salvia officinalis	G	R	43.3
Mentha spicata	G	O	81.3		Salvia officinalis	G	O	55.1
Mentha spicata	G	O	93.0		Salvia officinalis	G	W	100.0
Monarda didyma	G	S	35.8		Alchemilla mollis	T	S	98.8
N	G	R	100.0		Alchemilla mollis	T	O	24.3
Salvia officinalis	G	V	52.5		Alchemilla mollis	T	S	83.7
Salvia officinalis	G	O	100.0		Alchemilla mollis	T	O	80.0
Salvia officinalis	G	R	38.8		Althaea officianalis	T	S	34.1
Salvia officinalis	G	V	49.5		Althaea officinalis	T	S	34.3
Salvia officinalis	G	W	95.3		Althaea officinalis	T	S	30.8
Salvia officinalis	G	W	41.3		Ambrosia artemisiifolia linné	T	O	61.6
Salvia sclarea	G	W	31.1		Ambrosia artemisiifolia linné	T	R	52.1
Sarriette commune	G	O	59.7		Amelanchier sanguinea x A. laevis	T	S	38.6
Sarriette vivace	G	O	72.3		angelica archangelica	T	S	54.8
Sarriette vivace	G	S	26.0		Anthemis tinctorium	T	O	67.7
Satureja montana	G	V	78.5		Arachis hypogaea	T	V	85.1
Satureja montana	G	W	100.0		Aralia nudicaulis	T	S	74.2
Solanum tuberosum	G	O	35.8		Arctostaphylos uva-ursi	T	R	98.8
Sonchus oleraceus L.	G	O	41.0		Arctostaphylos uva-ursi	T	S	82.4
Sorghum dochna	G	S	100.0		Aronia prunifolia	T	W	27.3
Sorghum sudanense	G	O	32.6		Artemisia draculus	T	S	20.2
Sorghum sudanense	G	W	39.7		Artemisia dracunlus	T	S	37.2
Symphytum officinale	G	V	79.4		Artemisia Ludoviciana	T	O	54.8
Symphytum officinale	G	O	74.6		Aster sp ?	T	O	43.4
Tanacetum parthenium	G	V	23.1		Aster sp ?	T	R	99.9
Tanacetum parthenium	G	W	24.3		Ayperus esculentus	T	W	46.9
Tanacetum vulgare	G	W	20.8		Beta vulgaris	T	R	81.4
Tanacetum vulgare	G	O	32.0		Beta vulgaris	T	O	30.6
Tanacetum vulgare	G	O	58.5		Betula glandulosa	T	W	58.2
Tanacetum vulgare "Goldsticks"	G	V	44.8		Borago officinalis	T	O	20.2
Taraxacum officinale	G	V	58.2		Brassica juncea	T	R	56.6
Thymus fragantissumus	G	R	39.9		Brassica napus	T	R	34.1
Thymus herba-barona	G	W	26.6		Brassica nigra	T	S	32.3
Thymus herba-barona	G	V	35.7		Brassica rapa	T	R	21.4
Thymus praecox subsp arctitus	G	O	78.0		Calamintha nepeta	T	V	71.4
Thymus serpyllum	G	V	47.4		Calamintha nepeta	T	W	30.3
Thymus serpyllum	G	O	100.0		Canna edulis	T	O	31.9
Thymus serpyllum	G	W	22.6		Canneberge	T	R	66.3
Thymus serpyllum	G	V	70.2		Capsella bursa-pastoris (linné) médicus	T	R	37.1
Thymus vulgaris	G	O	40.8		Carya cordiformis	T	W	100.0
Thymus vulgaris	G	W	37.3		Chaerophyllum bulbosum	T	V	86.0
Thymus vulgaris "Argenteus"	G	V	87.7		Chrysanthemum leucanthemum linné	T	O	45.4
Thymus x citriodorus	G	W	27.2		Cichorium intybus	T	V	74.8
Vaccinum angustifolium	G	S	41.7		Cichorium intybus	T	W	23.8
Vaccinum macrocarpon	G	W	63.5		Cichorium intybus	T	O	38.9
Viburnum trilobum Marsh.	G	R	67.7		Cimicifuga racemosa	T	W	65.1
Viburnum trilobum Marsh.	G	W	23.6		Citrullus colocynthus	T	S	50.2
Vicia sativa	G	O	38.5		Citrus limettoides	T	O	45.1

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Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Vicia villosa	G	O	25.2		Citrus limettoides	T	V	28.9
Vitia sp.	G	S	24.8		Citrus limon	T	O	25.9
Vitia sp.	G	W	100.0		Citrus limon	T	V	43.3
Vitia sp.	G	R	100.0		Coix Lacryma-Jobi	T	O	22.1
Vitia sp.	G	S	20.8		Coriandrum sativum	T	W	62.0
Zea mays	G	O	53.7		Crataegus sp ?	T	R	44.0
Perilla frutescens	T	O	100.0		Crataegus submollis	T	S	40.7
Perilla frutescens	T	W	61.7		Crataegus submollis	T	S	29.3
Perilla frutescens	T	V	75.6		Curcuma longa syn. C. domestica	T	O	22.2
Achillea millefolium	T	W	41.8		Cynara scolymus	T	R	42.2
Achillea millefolium	T	V	31.5		Dioscorea batatas	T	O	29.1
Acorus calamus	T	R	68.4		Dioscorea batatas	T	O	28.9
Acorus calamus	T	S	39.2		Diospiros Kaki	T	V	57.8
Adiantum pedatum	T	R	100.0		Dirca palustris	T	S	39.2
Agastache foeniculum	T	O	78.0		Dolichus lablab	T	R	42.9
Agastache foeniculum "Snow Pike"	T	W	34.5		Dryopteris filix-mas	T	O	24.9
Agastache foeniculum "Snow Pike"	T	V	54.3		Dryopteris filix-mas	T	R	100.0
Agrimonia eupatoria	T	W	100.0		Echinacea purpurea	T	V	78.9
Alchemilla mollis	T	V	37.1		Melissa officinalis	T	V	36.0
Alchemilla mollis	T	W	100.0		Melissa officinalis	T	W	36.8
Echinacea purpurea	T	W	95.8		Melissa officinalis	T	O	100.0
Echinacea purpurea	T	O	53.7		Melissa officinalis	T	R	30.3
Erigeron speciosus (Lindl.) D.C.	T	O	96.2		mentha arvensis	T	R	67.2
Fragaria	T	O	42.7		Mentha piperita	T	S	20.8
Fragaria x ananassa	T	S	100.0		Mentha piperita	T	O	100.0
Fragaria x ananassa	T	S	100.0		Mentha piperita	T	S	26.9
Fruit de la passion	T	O	30.2		Mentha piperita	T	O	97.8
Fucus vesiculosis	T	O	93.3		Mentha piperita vulgaris	T	W	20.2
Galinsoga ciliata (Rofiresque) Blake.	T	R	33.0		Mentha piperita vulgaris	T	V	42.5
Galium odoratum	T	R	27.0		Mentha pulegium	T	O	100.0
Gaultheria hispidula (L.) Muhl	T	W	100.0		Mentha spicata	T	W	51.6
Gaultheria procumbens	T	W	30.0		Mentha spicata	T	V	81.8
Gaultheria procumbens	T	S	100.0		Mentha spicata	T	O	100.0
Glycine max Envy	T	O	20.1		Mentha spicata	T	O	100.0
Glycyrrhiza glabra	T	W	47.9		Mentha spicata	T	S	23.2
Guizotia abyssinica	T	R	74.1		Nepeta cataria	T	V	62.8
Guizotia abyssinica	T	S	22.7		Ocimum Basilicum	T	V	41.1
Hamamelis virginiana	T	O	100.0		Ocimum Basilicum	T	W	40.0
Hamamelis virginiana	T	R	100.0		Ocimum Basilicum	T	O	28.4
Helenium hoopesii	T	O	21.7		Oenothera biennis linné	T	O	67.3
Helenium hoopesii	T	S	24.6		Oenothera biennis linné	T	R	100.0
Helianthus annus	T	O	21.0		Onobrychis viciafolia	T	O	34.0
Helianthus strumosus	T	O	85.6		Origanum marjonara	T	O	29.5
Helianthus tuberosa	T	V	64.5		Origanum vulgare	T	V	55.5
Helianthus tuberosa	T	W	100.0		Origanum vulgare	T	W	67.7
Helichrysum angustifolium	T	O	100.0		Origanum vulgare	T	W	46.4
Helichrysum angustifolium	T	W	87.0		Origanum vulgare	T	V	68.6
Helichrysum angustifolium	T	V	84.4		Origanum vulgare	T	W	99.9
Helichrysum angustifolium	T	S	92.3		Origanum vulgare	T	V	42.0
Helichrysum thianschanicum Regel	T	O	59.5		Origanum Vulgare	T	V	28.8
Heliotropium arborescens	T	O	85.1		Origanum Vulgare	T	W	46.7
Hibiscus cannabinus	T	O	25.0		Origanum vulgare	T	O	100.0
Humulus lupulus	T	S	21.4		Origanum vulgare	T	W	51.7
Humulus lupulus	T	S	21.5		Origanum vulgare	T	S	30.8
Humulus lupulus	T	R	88.4		Origanum vulgare	T	O	25.4
Humulus lupulus	T	S	22.5		Origanum vulgare	T	S	38.2
Hypericum perforatum	T	R	100.0		oxyria digyna	T	V	23.1
Inula helenium	T	V	97.1		Pastinaca sativa	T	O	33.1

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Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Inula helenium	T	W	69.0		Pastinaca sativa	T	R	22.2
Inula helenium	T	S	29.3		Petroselinum crispum Nyman ex.A. W Hill	T	W	24.8
Ipomea batalas	T	O	27.0		Peucedanum cervaria	T	R	53.0
Iris versicolor	T	R	22.9		Peucedanum cervaria	T	R	35.9
Juniperus communis	T	R	100.0		Pfaffia paniculata	T	O	85.9
Krameria Triandra	T	O	52.6		Phaseolus vulgaris	T	O	35.7
Lathyrus sylvestris	T	R	32.5		Phytolacca americana	T	S	28.6
Laurus nobilis	T	S	100.0		Phytolacca decandra syn. P. americana	T	O	31.6
Lavendula angustifolia	T	V	74.8		Plectranthus sp.	T	V	66.0
Lavendula angustifolia	T	W	70.2		Polygonium chinense	T	S	33.2
Lavendula latifolia	T	W	85.6		Polygonum aviculare linné	T	R	100.0
Lavendula latifolia	T	V	63.3		Populus X petrowskyana	T	O	25.4
Lavendula latifolia	T	O	20.2		Potentilla anserina	T	S	55.8
Ledum groenlandicum	T	R	100.0		Poterium sanguisorba	T	W	100.0
Ledum groenlandicum	T	S	94.1		Poterium sanguisorba	T	V	82.3
Lepidium sativum	T	O	20.5		Prunella vulgaris	T	O	52.6
Litchi chinensis	T	S	100.0		Psoralea corylifolia	T	O	21.3
Lolium multiflorum	T	O	22.7		Psoralea corylifolia	T	S	26.0
Lonicera ramosissima	T	S	30.9		Psoralea corylifolia	T	S	27.4
Lotus corniculatus	T	R	60.2		Pteridium aquilinum	T	R	100.0
Malus	T	V	23.1		Punica granatum	T	V	21.3
Malva moschata	T	S	31.4		Punica granatum	T	W	77.1
Melissa officinalis	T	V	81.4		Punica granatum	T	S	43.9
Melissa officinalis	T	W	87.5		Satureja repandra	T	R	35.8
Melissa officinalis	T	O	100.0		Satureja repandra	T	W	100.0
Radix Rehmannia	T	O	23.9		Satureja repandra	T	V	75.0
Raphanus raphanistrum	T	R	36.5		Solanum Tuberosum	T	O	30.9
Raphanus raphanistrum	T	R	30.5		Solidago canadensis	T	R	91.8
Rhamnus frangula	T	R	100.0		Sonchus oleraceus L.	T	O	45.9
Rheum palmatum	T	W	100.0		Sorghum dochna Snowdrew	T	O	31.5
Rianus communis	T	R	100.0		Sorghum sudanense	T	O	33.6
Rianus communis	T	S	100.0		Stipa capillata L.	T	O	33.0
Rianus communis	T	S	68.2		Symphytum officinale	T	O	94.1
Ribes Grossularia L.	T	W	61.1		Symphytum officinale	T	O	42.8
Ribes nidigrolaria	T	W	32.1		Tanacetum parthenium	T	W	40.1
Ribes nigrum	T	O	90.2		Tanacetum parthenium	T	V	33.6
Ribes nigrum	T	S	20.3		Tanacetum vulgare	T	V	36.5
Ribes nigrum L.	T	W	21.1		Tanacetum vulgare	T	W	51.2
Ribes nigrum L.	T	W	51.6		Tanacetum vulgare	T	O	95.6
Ribes sativam syme	T	W	20.9		Tanacetum vulgare	T	O	38.4
Ribes uva-crispa	T	S	41.8		Tanacetum vulgare	T	R	27.4
Rosa rugosa	T	S	100.0		Tanacetum vulgare "Goldsticks"	T	V	37.9
Rosa rugosa thumb.	T	W	94.1		Taraxacum officinale	T	V	57.8
Rosmarinum officinalis	T	O	100.0		Thymus fragantissumus	T	R	34.0
Rosmarinum officinalis	T	R	40.0		Thymus fragantissumus	T	W	72.7
Rosmarinum officinalis	T	V	76.9		Thymus fragantissumus	T	V	71.0
Rubus canadensis	T	S	31.3		Thymus praecox subsp arctitus	T	O	59.2
Rubus canadensis	T	V	22.8		Thymus pseudolanuginosus	T	O	85.7
Rubus canadensis	T	W	100.0		Thymus pseudolanuginosus	T	W	20.9
Rubus idaeus	T	V	25.0		Thymus serpyllum	T	O	94.8
Rubus idaeus L.	T	S	100.0		Thymus serpyllum	T	W	38.4
Rubus ideaus	T	S	46.1		Thymus vulgaris	T	O	100.0
Rubus ideaus	T	R	32.0		Thymus vulgaris "Argenteus"	T	V	80.4
Rubus ideaus	T	O	28.5		Thymus X citriodorus	T	O	100.0
Rubus occidentalis	T	R	100.0		Tiarella cordifolia	T	R	100.0
Rubus occidentalis	T	O	23.5		Trichosanthes kirilowii	T	O	100.0
Rumes scutatus	T	O	27.1		Triticale sp.	T	O	24.4
Rumex acetosella linné	T	O	23.0		Tropaeolum majus	T	O	20.6

Table 7
Cath G

7

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Rumex crispus linné	T	R	100.0		Ulmus americana	T	O	43.7
Rumex crispus linné	T	R	100.0		Urtica dioica	T	R	28.9
Salvia (elegens)	T	O	100.0		Vaccinium angustifolium	T	S	43.2
Salvia elegens	T	W	63.5		Vaccinium angustifolium	T	S	42.4
Salvia officinalis	T	O	34.0		Vaccinium macrocarpon	T	W	59.2
Salvia officinalis	T	R	41.7		Vaccinium macrocarpon	T	S	27.2
Salvia officinalis	T	V	64.3		Vaccinium macrocarpon	T	S	21.6
Salvia officinalis	T	W	100.0		Vaccinum macrocarpon	T	V	62.6
Salvia officinalis	T	R	38.8		Veronica officinalis	T	S	52.6
Salvia officinalis	T	O	73.4		Viburnum trilobum Marsh.	T	R	100.0
Salvia officinalis	T	W	95.3		Vicia villosa	T	O	36.6
Salvia officinalis	T	V	56.8		Vitia sp.	T	W	58.9
Salvia officinalis	T	W	25.1		Vitis sp	T	S	24.7
Salvia sclarea	T	W	28.6		Vitis sp.	T	S	22.8
Sambucus canadensis	T	S	40.1		Vitis sp.	T	S	21.7
Sambucus canadensis L.	T	O	50.2		Zea mays	T	S	20.5
Sambucus caradensis	T	S	29.7					
Sanguisorba minor	T	V	32.0					
Sanguisorba minor	T	W	59.5					
Sanguisorba minor	T	S	58.5					
Sanguisorba minor	T	S	68.5					
Satureja hortensis	T	O	66.5					
Satureja hortensis	T	S	20.1					
Satureja montana	T	O	43.3					
Satureja montana	T	R	36.7					
Satureja montana	T	W	100.0					
Satureja montana	T	V	81.1					
Satureja montana	T	S	40.6					
Satureja montana	T	V	54.0					
Satureja montana	T	O	90.1					

Table 8 1
Cath L

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Actinidia arguta	A	R	63.3		Capsella bursa-pastoris	A	O	47.0
Actinidia arguta	A	O	46.3		Capsicum annuum	A	R	29.1
Achillea millefolium	A	O	32.4		Carum carvi	A	O	60.4
Achillea millefolium	A	R	26.3		Chaerophyllum bulbosum	A	O	48.6
Aconitum napellus	A	O	30.0		Chaerophyllum bulbosum	A	R	48.2
Acorus calamus	A	R	25.9		Chelidonium majus	A	O	35.5
Adiantum pedatum	A	O	20.2		Chelidonium majus	A	R	23.1
Adiantum pedatum	A	R	22.2		Chenopodium bonus-henricus	A	O	65.9
Agropyron repens	A	O	98.6		Chenopodium quinoa	A	R	62.3
Agropyron repens	A	R	61.8		Chenopodium quinoa	A	O	90.0
Alchemilla mollis	A	O	75.7		Cicer arietinum	A	O	82.4
Alchemilla mollis	A	R	36.5		Cichorium intybus	A	R	58.0
Allium porrum	A	R	39.7		Cichorium intybus	A	O	81.7
Allium porrum	A	O	58.2		Coix Lacryma-Jobi	A	R	32.6
Allium cepa	A	O	51.0		Coix Lacryma-Jobi	A	O	43.4
Allium sativum	A	O	53.8		Coriandrum sativum	A	R	26.9
Allium schoenoprasum	A	O	74.8		Coriandrum sativum	A	O	65.0
Allium Tuberosum	A	O	69.5		Cornus canadensis	A	R	99.7
Aloe vera	A	R	44.7		Cornus canadensis	A	O	60.6
Aloe vera	A	O	55.6		Crataegus sp	A	R	25.9
Althaea officinalis	A	O	95.0		Crataegus sp	A	O	28.2
Althaea officinalis	A	R	33.4		Cryptotaenia canadensis	A	O	73.3
Amaranthus retroflexus	A	R	74.5		Cryptotaenia canadensis	A	R	36.1
Amaranthus retroflexus	A	O	98.4		Cymbopogon citratus	A	O	32.7
Anethum graveolens	A	R	37.4		Daucus carota	A	R	63.6
Anethum graveolens	A	O	58.7		Daucus carota	A	O	43.4
Angelica archangelica	A	O	79.1		Dirca palustris	A	O	61.1
Apium graveolens	A	R	27.9		Dirca palustris	A	R	46.6
Apium graveolens	A	O	46.5		Echinacea purpurea	A	O	54.8
Aralia nudicaulis	A	O	89.3		Eleusine coracana	A	O	36.4
Aralia nudicaulis	A	R	55.4		Fagopyrum esculentum	A	R	37.9
Arctium lappa	A	R	32.8		Fagopyrum esculentum	A	O	43.3
Arctium minus	A	R	72.5		Fagopyrum tataricum	A	R	28.4
Arctium minus	A	O	61.3		Fagopyrum tataricum	A	O	32.8
Armoracia rusticana	A	O	95.8		Foeniculum vulgare	A	O	48.8
Aronia melanocarpa	A	R	39.8		Fragaria x ananassa	A	R	46.3
Aronia melanocarpa	A	O	28.2		Fragaria x ananassa	A	O	78.8
Artemisia Absinthium	A	R	51.7		Galinsoga ciliata	A	O	46.0
Artemisia Absinthium	A	O	63.7		Galium odoratum	A	R	59.8
Artemisia dracunculus	A	O	45.4		Galium odoratum	A	O	79.5
Aster sp	A	R	41.8		Gaultheria hispidula	A	R	53.4
Aster sp	A	O	91.5		Gaultheria hispidula	A	O	54.3
Atropa belladonna	A	O	47.3		Glechoma hederacea	A	O	23.4
Atropa belladonna	A	R	31.7		Glechoma hederacea	A	R	26.9
Cyperus esculentus	A	R	41.3		Glycine max	A	R	20.5
Cyperus esculentus	A	O	33.8		Glycine max	A	O	73.8
Beckmannia eruciformis	A	R	40.5		Glycyrrhiza glabra	A	O	57.7
Beckmannia eruciformis	A	O	60.8		Glycyrrhiza glabra	A	R	53.8
Beta vulgaris	A	R	66.1		Guizotia abyssinica	A	R	29.6
Beta vulgaris	A	O	79.5		Guizotia abyssinica	A	O	78.6
Beta vulgaris spp. Maritima	A	O	63.3		Hamamelis virginiana	A	R	41.2
Beta vulgaris spp. Maritima	A	R	59.1		Hedeoma pulegioides	A	O	26.3
Borago officinalis	A	O	40.9		Helleborus niger	A	O	36.9
Brassica napus	A	O	64.6		Helleborus niger	A	R	35.4
Brassica napus	A	R	21.1		Hordeum hexastichon	A	R	31.1
Brassica oleracea	A	R	66.6		Hyssopus officinalis	A	R	84.8
Brassica oleracea	A	O	68.6		Hyssopus officinalis	A	O	85.8
Brassica rapa	A	O	99.0		Inula helenium	A	O	58.4
Brassica rapa	A	R	99.3		Inula helenium	A	R	32.7

Table 8
Cath L

2

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Campanula rapunculus	A	R	59.0		Ipomoea Batatas	A	O	29.6
Campanula rapunculus	A	O	50.6		Lathyrus sativus	A	R	31.7
Canna edulis	A	O	23.9		Lathyrus sativus	A	O	71.1
Capsella bursa-pastoris	A	R	49.0		Lathyrus sylvestris	A	R	65.3
Lathyrus sylvestris	A	O	66.4		Rosa rugosa	A	O	35.9
Laurus nobilis	A	R	43.1		Rosmarinus officinalis	A	O	78.2
Laurus nobilis	A	O	46.1		Rubus allegheniensis	A	O	76.8
Leonurus cardiaca	A	O	63.3		Rubus canadensis	A	R	40.7
Leonurus cardiaca	A	R	24.5		Rubus canadensis	A	O	72.6
Levisticum officinale	A	R	20.9		Rubus idaeus	A	R	35.5
Levisticum officinale	A	O	43.8		Rubus idaeus	A	O	97.9
Lotus corniculatus	A	R	59.0		Rumex Acetosa	A	O	32.0
Lotus corniculatus	A	O	87.4		Rumex acetosella	A	R	73.2
Lycopersicon esculentum	A	R	28.0		Rumex acetosella	A	O	56.9
Malva sylvestris	A	O	23.1		Rumex crispus	A	R	49.7
Medicago sativa	A	R	63.8		Rumex crispus	A	O	37.5
Medicago sativa	A	O	53.6		Rumex Scutatus	A	O	53.1
Melilotus albus	A	O	93.7		Rumex Scutatus	A	R	25.9
Melilotus albus	A	R	80.1		Ruta graveolens	A	O	56.2
Melissa officinalis	A	R	40.8		Salix purpurea	A	R	71.4
Melissa officinalis	A	O	69.5		Salix purpurea	A	O	24.7
Mentha piperita	A	R	61.0		Salvia elegans	A	O	67.6
Mentha piperita	A	O	73.2		Salvia officinalis	A	O	70.5
Mentha pulegium	A	O	69.0		Salvia officinalis	A	R	56.6
Mentha spicata	A	O	94.6		Salvia sclarea	A	O	70.1
Mentha suaveolens	A	O	55.2		Santolina chamaecyparissus	A	R	59.5
Nepeta cataria	A	R	45.9		Santolina chamaecyparissus	A	O	59.2
Nepeta cataria	A	O	66.3		Satureja montana	A	O	71.7
Nicotiana tabacum	A	R	46.8		Scorzonera hispanica	A	O	21.9
Oenothera biennis	A	R	69.8		Secale cereale	A	R	33.3
Oenothera biennis	A	O	47.3		Senecio vulgaris	A	R	47.5
Origanum majorana	A	O	38.5		Senecio vulgaris	A	O	20.8
Origanum vulgare	A	R	43.3		Setaria italica	A	R	48.6
Origanum vulgare	A	O	68.2		Setaria italica	A	O	37.1
Panax quinquefolius	A	R	41.7		Sium Sisarum	A	O	33.8
Panax quinquefolius	A	O	83.7		Sium Sisarum	A	R	62.5
Pastinaca sativa	A	O	62.8		Solanum tuberosum	A	O	53.6
Pastinaca sativa	A	R	44.2		Solidago sp	A	R	54.0
Perilla frutescens	A	O	66.2		Solidago sp	A	O	95.1
Petasites japonicus	A	R	22.6		Sonchus oleraceus	A	R	59.4
Petasites japonicus	A	O	25.5		Sonchus oleraceus	A	O	69.2
Petroselinum crispum	A	O	79.1		Sorghum dochna	A	R	33.9
Petroselinum crispum	A	R	32.3		Sorghum dochna	A	O	55.3
Phalaris canariensis	A	R	45.4		Sorghum durra	A	R	61.3
Phaseolus vulgaris	A	R	31.0		Sorghum durra	A	O	83.9
Phaseolus Vulgaris	A	O	61.8		Stachys byzantina	A	R	61.6
Pimpinella anisum	A	O	38.1		Stachys byzantina	A	O	73.8
Plantago major	A	O	95.1		Stellaria graminea	A	R	40.1
Plectranthus sp.	A	R	76.9		Stellaria graminea	A	O	55.8
Plectranthus sp.	A	O	58.0		Stellaria media	A	R	70.9
Polygonum aviculare	A	R	28.0		Stellaria media	A	O	51.4
Polygonum aviculare	A	O	49.7		Tanacetum cinerariifolium	A	O	67.7
Potentilla anserina	A	R	26.6		Tanacetum parthenium	A	R	50.8
Poterium Sanquisorba	A	O	58.0		Tanacetum parthenium	A	O	81.9
Pteridium aquilinum	A	R	32.9		Tanacetum vulgare	A	R	56.2
Raphanus raphanistrum	A	R	70.7		Tanacetum vulgare	A	O	51.9
Raphanus raphanistrum	A	O	83.2		Taraxacum officinale	A	O	98.7
Raphanus salivus	A	R	90.9		Taraxacum officinale	A	R	82.1
Raphanus sativus	A	O	95.4		Teucrium chamaedrys	A	O	62.2

Table 8 3
Cath L

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Rheum rhabarbarum	A	R	26.0		Thymus praecox subsp arcticus	A	R	42.0
Rheum rhabarbarum	A	O	62.9		Thymus praecox subsp arcticus	A	O	54.2
Ribes nigrum	A	O	62.9		Thymus serpyllum	A	O	93.4
Ribes Sylvestre	A	R	34.5		Thymus serpyllum	A	R	57.5
Ribes Sylvestre	A	O	80.3		Thymus vulgaris	A	R	68.7
Ricinus communis	A	R	89.9		Thymus vulgaris	A	O	55.8
Ricinus communis	A	O	81.0		Thymus x citriodorus	A	O	72.8
Rosa rugosa	A	R	32.9		Thymus x citriodorus	A	R	31.9
Tragopogon porrifolius	A	O	67.2		Asparagus officinalis	G	O	86.3
Tragopogon porrifolius	A	R	37.0		Aster Linné	G	O	57.5
Tropaeolum malus	A	O	62.8		Aster sp	G	R	48.7
Typha latifolia	A	R	77.5		Aster sp	G	O	94.5
Typha latifolia	A	O	70.6		Atropa belladonna	G	R	29.2
Vaccinium Corymbosum	A	O	74.7		Beckmannia eruciformis	G	O	32.9
Vaccinium Corymbosum	A	R	69.5		Beta vulgaris	G	R	47.9
Vaccinium macrocarpon	A	R	71.4		Beta vulgaris	G	O	61.9
Vaccinum macrocarpon	A	O	78.9		Borago officinalis	G	O	51.9
Verbascum thapsus	A	O	76.8		Brassica Napus	G	O	92.1
Verbascum thapsus	A	R	62.0		Brassica napus	G	R	30.2
Vicia sativa	A	R	79.2		Brassica oleracea	G	R	79.0
Vicia sativa	A	O	88.7		Brassica oleracea	G	O	85.4
Vicia villosa	A	O	74.5		Brassica rapa	G	O	81.7
Vicia villosa	A	R	61.0		Calamagrostis arundiflora	G	R	59.7
Vinca minor	A	O	46.7		Campanula rapunculus	G	R	65.4
Vinca minor	A	R	31.9		Campanula rapunculus	G	O	54.8
Vitiis sp.	A	R	89.5		Canna edulis	G	O	30.0
Vitiis sp.	A	O	54.6		Capsella bursa-pastoris	G	R	48.1
Zea mays	A	R	52.0		Capsella bursa-pastoris	G	O	50.9
Zea mays	A	O	93.8		Tropaeolum majus	G	R	22.2
Achillea millefolium	G	O	45.8		Tropaeolum majus	G	O	59.1
Achillea millefolium	G	R	24.6		Carum carvi	G	O	62.4
Aconitum napellus	G	R	28.7		Cerastium tomentosum	G	R	45.1
Acorus calamus	G	R	37.5		Chaerophyllum bulbosum	G	O	30.0
Acorus calamus	G	O	32.8		Chaerophyllum bulbosum	G	R	54.5
Actinidia arguta	G	R	47.8		Chelidonium majus	G	O	43.2
Actinidia arguta	G	O	78.4		Chelidonium majus	G	R	30.7
Adiantum pedatum	G	O	45.9		Chichorium endivia	G	O	64.2
Adiantum pedatum	G	R	27.0		Chichorium endivia subsp endivia	G	R	48.3
Agropyron repens	G	O	83.0		Chichorium endivia subsp endivia	G	O	67.0
Agropyron repens	G	R	31.9		Cichorium intybus	G	O	78.3
Alchemilla mollis	G	O	71.0		Cichorium intybus	G	R	87.8
Allium ampeloprasum	G	R	36.8		Circium arvense	G	R	94.1
Allium ampeloprasum	G	O	62.2		Circium arvense	G	O	58.7
Allium cepa	G	R	56.1		Coix Lacryma-Jobi	G	R	35.7
Allium cepa	G	O	64.4		Coix Lacryma-Jobi	G	O	31.4
Allium sativum	G	O	65.2		Cornus canadensis	G	R	61.3
Allium schoenoporasum	G	O	78.4		Cornus canadensis	G	O	80.6
Allium tuberosum	G	O	46.6		Crataegus submollis	G	R	21.0
Aloe vera	G	O	45.7		Crataegus submollis	G	O	44.4
Althaca officianalis	G	O	50.0		Cymbopogon citratus	G	R	39.6
althaea officinalis	G	R	42.2		Cyperus esculentus	G	R	62.4
Amaranthus retroflexus	G	R	41.7		Cyperus esculentus	G	O	49.6
Amaranthus retroflexus	G	O	90.3		Daucus carota	G	O	36.3
Anethum graveolens	G	R	31.3		Daucus carota	G	R	44.3
Anethum graveolens	G	O	60.5		Dirca palustris	G	O	85.1
Angelica archangelica	G	O	64.3		Dirca palustris	G	R	47.1
Angelica archangelica	G	R	63.3		Echinacea purpurea	G	O	36.4
Apium graveolens	G	O	57.0		Eleusine coracana	G	O	65.4
Apium graveolens	G	R	28.4		Eleusine coracana	G	R	36.8

Table 8
Cath L

4

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Aralia nudicaulis	G	O	71.8		Erigeron speciosus	G	R	39.1
Aralia nudicaulis	G	R	38.2		Erysimum perofskianum	G	R	58.7
Arctium minus	G	R	42.4		Erysimum perofskianum	G	O	93.1
Arctium minus	G	O	41.5		Fagopyrum esculentum	G	R	36.4
Armoracia rusticana	G	O	67.1		Fagopyrum esculentum	G	O	41.0
Aronia melanocarpa	G	R	32.0		Fagopyrum tataricum	G	R	43.3
Aronia melanocarpa	G	O	70.0		Fagopyrum tataricum	G	O	29.1
Artemisia absinthium	G	R	63.1		Galinsoga ciliata	G	R	49.8
Artemisia absinthium	G	O	61.1		Galinsoga ciliata	G	O	58.0
Asclepias incarnata	G	R	58.4		Galium odoratum	G	R	65.1
Asclepias incarnata	G	O	63.3		Galium odoratum	G	O	94.2
Asparagus officinalis	G	R	61.2		Gaultheria hispidula	G	R	55.7
Gaultheria hispidula	G	O	50.6		Oenothera biennis	G	O	44.3
Gaultheria procumbens	G	R	53.3		Origanum majorana	G	O	44.7
Gaultheria procumbens	G	O	67.7		Origanum vulgare	G	O	58.1
Glechoma hederacea	G	O	70.9		Origanum vulgare	G	R	22.9
Glechoma hederacea	G	R	25.3		Oryza Sativa	G	R	71.8
Glycine max	G	R	78.6		Oryza Sativa	G	O	39.8
Glycine max	G	O	85.9		Oxalis Deppei	G	R	80.1
Glycyrrhiza glabra	G	R	59.1		Oxalis Deppei	G	O	28.8
Glycyrrhiza glabra	G	O	60.6		Oxyria digyna	G	R	51.8
Guizotia abyssinica	G	R	41.8		Oxyria digyna	G	O	36.2
Guizotia abyssinica	G	O	74.3		Panax quinquefolius	G	R	72.1
Hamamelis virginiana	G	R	44.2		Panax quinquefolius	G	O	81.6
Helianthus strumosus	G	O	40.6		Panicum miliaceum	G	O	93.4
Helianthus strumosus	G	R	61.4		Passiflora caerula	G	R	33.2
Helianthus tuberosus	G	O	75.1		Passiflora caerula	G	O	63.2
Helianthus tuberosus	G	R	30.1		Pastinaca sativa	G	O	54.0
Helichrysum thianschanicum	G	R	56.3		Pennisetum alopecuroides	G	R	61.0
Helichrysum thianschanicum	G	O	84.0		Petasites japonicus	G	O	50.0
Helleborus niger	G	O	38.8		Petroselinum crispum	G	R	49.1
Helleborus niger	G	R	25.9		Petroselinum crispum	G	O	52.2
Hordeum hexastichon	G	O	62.3		Phalaris canariensis	G	O	72.1
Hordeum hexastichon	G	R	29.4		Phaseolus vulgaris	G	R	21.8
Hyssopus officinalis	G	R	64.7		Pimpinella anisum	G	O	86.2
Hyssopus officinalis	G	O	71.9		Pisum sativum	G	O	61.6
Inula helenium	G	O	29.4		Pisum sativum	G	R	57.5
Inula helenium	G	R	25.7		Plantago major	G	O	91.9
Ipomoea batatas	G	O	36.9		Plectranthus sp.	G	R	53.0
Lactuca sativa	G	O	70.4		Plectranthus sp.	G	O	73.0
Lactuca sativa	G	R	49.9		Polygonum aviculare	G	R	32.2
Lathyrus sativus	G	O	62.8		Polygonum aviculare	G	O	36.4
Lathyrus sativus	G	R	29.0		Portulaca oleracea	G	R	82.1
Lathyrus sylvestris	G	R	52.1		Portulaca oleracea	G	O	63.3
Lathyrus sylvestris	G	O	52.5		Potentilla anserina	G	R	26.3
Laurus nobilis	G	R	27.1		Poterium sanquisorba	G	O	79.9
Laurus nobilis	G	O	61.0		Prunella vulgaris	G	R	68.8
Lavandula angustifolia	G	R	51.9		Prunella vulgaris	G	O	57.4
Lavandula angustifolia	G	O	57.0		Raphanus Raphanistrum	G	R	91.9
Ledum groenlandicum	G	O	73.4		Raphanus Raphanistrum	G	O	55.2
Ledum groenlandicum	G	R	52.6		Rhaphanus sativus	G	R	55.7
Leonurus cardiaca	G	O	88.8		Rhaphanus sativus	G	O	78.4
Leonurus cardiaca	G	R	38.5		Rheum rhabarbarum	G	R	27.1
Levistecum officinale	G	R	51.2		Rheum rhabarbarum	G	O	56.8
Levistecum officinale	G	O	78.3		Ribes nidigrolaria	G	O	70.7
Lotus corniculatus	G	O	86.8		Ribes nigrum	G	R	37.9
Lotus corniculatus	G	R	50.3		Ribes nigrum	G	O	98.9
Lupinus polyphyllus	G	R	78.9		Ribes Sylvestris	G	R	25.2
Lupinus polyphyllus	G	O	66.7		Ribes Sylvestris	G	O	65.7

Table 8
Cath L

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Malus hupehensis	G	R	52.7		Ricinus communis	G	R	39.3
Malus hupehensis	G	O	64.1		Ricinus communis	G	O	84.3
Malva sylvestris	G	R	26.2		Rosmarinus officinalis	G	O	68.6
Medicago sativa	G	R	43.4		Rubus idaeus	G	O	26.3
Medicago sativa	G	O	92.5		Rumex crispus	G	R	54.2
Melilotus albus	G	R	75.5		Rumex crispus	G	O	62.0
Melilotus albus	G	O	70.0		Rumex scutatus	G	O	38.1
Melissa officinalis	G	O	81.1		Ruta graveolens	G	O	85.0
Mentha piperita	G	O	54.4		Salix purpurea	G	R	74.7
Mentha pulegium	G	O	59.4		Salix purpurea	G	O	38.5
Mentha spicata	G	R	38.8		Salvia elegans	G	O	54.8
Mentha spicata	G	O	83.0		Salvia officinalis	G	R	89.7
Mentha suaveolens	G	O	56.5		Salvia officinalis	G	O	84.9
Nepeta cataria	G	O	56.2		Salvia sclarea	G	O	61.8
Ocimum basilicum	G	O	60.3		Sambucus ebulus	G	R	48.2
Oenothera biennis	G	R	39.2		Sambucus ebulus	G	O	98.2
Santolina chamaecyparissus	G	R	61.3		Vaccinium macrocarpon	G	O	76.7
Santolina chamaecyparissus	G	O	88.2		Veratrum viride	G	O	35.4
Saponaria officinalis	G	R	52.9		Verbascum thapsus	G	O	72.9
Saponaria officinalis	G	O	71.8		Verbascum thapsus	G	R	60.5
Satureja hortensis	G	O	44.9		Viburnum trilobum	G	R	52.6
Satureja montana	G	O	76.8		Vicia sativa	G	R	36.6
Scorzonera hispanica	G	R	32.9		Vicia sativa	G	O	83.2
Scuttellaria lateriflora	G	O	49.8		Vicia villosa	G	O	77.3
Scuttellaria lateriflora	G	R	39.6		Vicia villosa	G	R	46.8
Secale cereale	G	R	37.0		Vinca minor	G	O	63.0
Senecio vulgaris	G	R	31.0		Vinca minor	G	R	30.8
Senecio vulgaris	G	O	47.0		Vitis sp.	G	R	52.7
Setaria italica	G	R	44.9		Vitis sp.	G	O	99.2
Setaria italica	G	O	42.0		Zea mays	G	R	45.1
Silene vulgaris	G	R	76.8		Zea mays	G	O	55.3
Silene vulgaris	G	O	92.2		Perilla frutescens	T	R	68.0
Sium sisarum	G	O	58.9		Perilla frutescens	T	O	74.4
Sium sisarum	G	R	66.6		Achillea millefolium	T	O	46.0
solanum melongena	G	R	66.8		Achillea millefolium	T	R	32.9
Solanum tuberosum	G	O	47.4		Aconitum napellus	T	O	35.2
Solidago sp	G	R	53.6		Aconitum napellus	T	R	31.9
Solidago sp	G	O	88.3		Acorus calamus	T	O	40.6
Sonchus oleraceus	G	R	62.5		Acorus calamus	T	R	26.9
Sonchus oleraceus	G	O	55.5		Actinidia arguta	T	R	80.0
Sorghum dochna	G	R	67.4		Actinidia arguta	T	O	66.3
Sorghum dochna	G	O	73.7		Adiantum pedatum	T	O	43.4
sorghum durra	G	R	24.8		Agrimonia eupatoria	T	O	37.5
sorghum durra	G	O	42.3		Agropyron repens	T	O	75.0
Sorghum sudanense	G	R	35.5		Agropyron repens	T	R	50.0
Sorghum sudanense	G	O	66.3		Alchemilla mollis	T	O	71.6
Stachys byzantina	G	R	75.5		Alchemilla mollis	T	R	81.1
Stachys byzantina	G	O	66.7		Allium ampeloprasum	T	O	84.4
Stellaria graminea	G	R	36.9		Allium cepa	T	O	49.2
Stellaria graminea	G	O	40.1		Allium cepa	T	R	30.1
Stellaria media	G	R	31.2		Allium sativum	T	O	63.8
Stellaria media	G	O	51.1		Allium schoenoprasum	T	O	79.6
Symphytum officinale	G	R	90.2		Allium tuberosum	T	O	55.8
Symphytum officinale	G	O	90.8		Allium tuberosum	T	R	29.6
Tanacetum cinerariifolium	G	O	76.1		Aloe vera	T	R	30.3
Tanacetum parthenium	G	R	70.1		Aloe vera	T	O	42.7
Tanacetum parthenium	G	O	62.4		Althaea officinalis	T	R	42.5
Tanacetum vulgare	G	R	36.2		Althaea officinalis	T	O	46.3
Tanacetum vulgare	G	O	72.5		Amaranthus candatus	T	R	37.3

Table 8 6
Cath L

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Taraxacum officinale	G	O	100.0		Amaranthus candatus	T	O	60.0
Taraxacum officinale	G	R	78.6		Amaranthus retroflexus	T	R	33.2
Teucrium chamaedrys	G	O	50.5		Amaranthus retroflexus	T	O	94.3
Teucrium chamaedrys	G	R	40.1		angelica archangelica	T	O	37.4
Thymus fragantissimus	G	R	81.4		angelica archangelica	T	R	55.7
Thymus fragantissimus	G	O	58.4		Anthriscus cerefolium	T	O	86.5
Thymus praecox subsp arcticus	G	R	49.2		Anthriscus cerefolium	T	R	69.6
Thymus praecox subsp arcticus	G	O	62.4		Apium graveolens	T	R	22.0
Thymus serpyllum	G	O	70.4		Aralia nudicaulis	T	O	77.5
Thymus serpyllum	G	R	54.9		Aralia nudicaulis	T	R	28.4
Thymus vulgaris	G	R	55.1		Arctium minus	T	R	54.4
Thymus x citriodorus	G	O	47.1		Arctium minus	T	O	89.5
Tiarella cordifolia	G	O	52.8		Armoracia rusticana	T	O	84.9
Typha latifolia	G	R	65.1		Aronia melanocarpa	T	R	61.9
Typha latifolia	G	O	46.9		Aronia melanocarpa	T	O	84.5
Vaccinium corymbosum	G	O	54.5		Artemisia absinthium	T	R	29.0
Vaccinium corymbosum	G	R	82.9		Artemisia absinthium	T	O	55.9
Vaccinium angustifolium	G	R	27.9		Artemisia dracunculus	T	O	96.7
Vaccinium angustifolium	G	O	66.8		Artium lappa	T	O	26.0
Vaccinium macrocarpon	G	R	40.7		Asclepias incarnata	T	R	58.5
Asclepias incarnata	T	O	66.8		Fagopyrum tataricum	T	O	25.6
Aster spp	T	R	40.5		Foeniculum vulgare	T	O	79.0
Aster spp	T	O	86.7		Fragaria x ananassa	T	O	26.0
Atropa belladonna	T	O	61.4		Galinsoga ciliata	T	R	34.6
Atropa belladonna	T	R	30.4		Galinsoga ciliata	T	O	60.3
Avena sativa	T	R	38.0		Galium odoratum	T	R	98.8
Cyperus esculentus	T	O	47.6		Galium odoratum	T	O	96.1
Cyperus esculentus	T	R	49.5		Gaultheria hispidula	T	O	33.1
Beta vulgaris	T	O	62.2		Gaultheria procumbens	T	O	84.2
Borago officinalis	T	O	39.1		Glechoma hederacea	T	O	70.1
Brassica Napus	T	O	89.3		Glechoma hederacea	T	R	38.5
Brassica nigra	T	R	26.9		Glycine max	T	O	54.8
Brassica oleracea	T	O	63.9		Glycine max	T	R	38.0
Brassica oleracea	T	R	76.2		Glycine max	T	O	88.7
Brassica oleracea	T	O	69.9		Glycyrrhiza glabra	T	O	65.5
Bromus inermis	T	R	79.8		Glycyrrhiza glabra	T	R	40.5
Bromus inermis	T	O	88.1		Guizotia abyssinica	T	R	48.1
Calamagrostis arundiflora m	T	R	62.8		Guizotia abyssinica	T	O	84.1
Calendula officinalis	T	R	64.6		Hamamelis virginiana	T	R	35.9
Canna edulis	T	O	47.5		Hedeoma pulegioides	T	R	24.8
Capsella bursa-pastoris	T	R	48.7		Helianthus strumosus	T	O	32.9
Capsella bursa-pastoris	T	O	40.9		Helianthus strumosus	T	R	31.0
Carex morrowii	T	R	45.7		Helianthus tuberosus	T	R	42.8
Carex morrowii	T	O	70.3		Helianthus tuberosus	T	O	72.1
Carum carvi	T	R	22.7		Helichrysum angustifolium	T	R	69.6
Cerastium tomentosum	T	R	46.8		Helichrysum angustifolium	T	O	84.9
Chaerophyllum bulbosum	T	R	22.9		Helichrysum thianschanicum	T	R	96.2
Chaerophyllum bulbosum	T	O	40.9		Helichrysum thianschanicum	T	O	80.7
Chelidonium majus	T	O	60.7		Humulus lupulus	T	O	71.3
Chelidonium majus	T	R	24.0		Humulus lupulus	T	R	60.6
Chenopodium quinoa	T	R	41.5		Hyoscyamus niger	T	O	68.0
Chenopodium quinoa	T	O	86.7		Hyssopus officinalis	T	R	73.3
Cicer arietinum	T	R	20.4		Hyssopus officinalis	T	O	76.9
Cicer arietinum	T	O	84.2		Inula helenium	T	O	93.3
Cichorium endivia	T	O	76.3		Inula helenium	T	R	63.5
Cichorium intybus	T	O	81.7		Ipomoea batatas	T	O	99.9
Cichorium intybus	T	R	73.3		Juniperus communis	T	R	26.9
Circium arvense	T	R	50.0		Kochia scoparia.	T	O	76.7
Circium arvense	T	O	74.8		Koeleria glauca	T	R	89.1

Table 8 7
Cath L

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Citrullus colocynthus	T	O	62.5		Koeleria glauca	T	O	67.7
Citrullus colocynthis	T	R	57.3		Lactuca sativa	T	O	75.2
Coix Lacryma-Jobi	T	R	33.7		Lactuca sativa	T	R	55.3
Coriandrum sativum	T	O	59.2		Lathyrus Sativus	T	R	23.3
Coriandrum sativum	T	R	37.1		Lathyrus Sativus	T	O	70.6
Cornus canadensis	T	R	82.6		Lathyrus sylvestris	T	R	77.1
Cornus canadensis	T	O	47.7		Lathyrus sylvestris	T	O	53.0
Crataegus sp	T	O	33.9		Laurus nobilis	T	R	61.6
Crataegus submollis	T	O	64.3		Laurus nobilis	T	O	92.7
Cryptotaenia canadensis	T	O	60.9		Lavandula angustifolia	T	R	54.1
Cryptotaenia canadensis	T	R	41.5		Lavandula angustifolia	T	O	84.4
Cymbopogon citratus	T	R	65.2		Lavandula latifolia	T	R	55.4
Cymbopogon citratus	T	O	65.6		Lavandula latifolia	T	O	82.9
Daucus carota	T	R	27.5		Ledum groenlandicum	T	O	96.1
Dioscorea batatas	T	O	42.3		Ledum groenlandicum	T	R	74.0
Dirca palustris	T	O	57.4		Lens culinaris subsp culinaris	T	R	36.4
Dirca palustris	T	R	29.5		Lens culinaris subsp culinaris	T	O	100.0
Echinacea purpurea	T	O	83.0		Levisticum officinale	T	R	38.8
Eleusine coracana	T	O	70.3		Levisticum officinale	T	O	73.4
Erysimum perofskianum	T	R	90.4		Lotus corniculatus	T	O	81.6
Erysimum perofskianum	T	O	92.2		Lotus corniculatus	T	R	52.0
Fagopyrum esculentum	T	R	61.6		Lupinus polyphyllus	T	R	53.3
Fagopyrum esculentum	T	O	39.0		Lupinus polyphyllus	T	O	64.4
Fagopyrum tataricum	T	R	36.7		Luzula sylvatica	T	R	62.6
Malus	T	O	70.9		Ribes Sylvestre	T	O	87.9
Malus hupehensis	T	R	77.6		Ribes Siylvestre	T	R	40.2
Malus hupehensis	T	O	72.4		Ribes Siylvestre	T	O	45.2
Medicago sativa	T	R	41.0		Rosmarinus officinalis	T	O	69.6
Medicago sativa	T	O	94.1		Rubus canadensis	T	R	37.2
Melilotus officinalis	T	R	44.0		Rubus canadensis	T	O	57.9
Melilotus officinalis	T	O	90.8		Rubus idaeus	T	R	64.9
Mentha piperita	T	O	20.6		Rubus idaeus	T	O	94.9
Menyanthes trifoliata	T	R	20.8		Rumes scutatus	T	O	74.9
Miscanthus sinensis	T	R	89.0		Rumes scutatus	T	R	20.7
Miscanthus sinensis	T	O	73.7		Rumex acetosella	T	R	40.1
Nepeta cataria	T	R	25.3		Rumex acetosella	T	O	42.0
Ocimum Basilicum	T	O	65.7		Rumex crispus	T	R	40.7
Oenothera biennis	T	R	40.2		Rumex crispus	T	O	51.2
Oenothera biennis	T	O	49.2		Ruta graveolens	T	O	91.2
Onobrychis viciifolia	T	R	53.2		Salix purpurea	T	R	55.5
Onobrychis viciifolia	T	O	49.2		Salix purpurea	T	O	51.2
Origanum vulgare	T	R	50.6		Salvia officinalis	T	R	64.7
Origanum vulgare	T	O	45.1		Salvia officinalis	T	O	66.6
Oryza sativa	T	R	40.3		Sambucus canadensis	T	O	92.5
Oryza sativa	T	O	28.6		Sambucus canadensis	T	R	64.0
Oxalis Deppei	T	R	35.2		Sanguisorba minor	T	O	68.4
Oxalis Deppei	T	O	42.1		Santolina chamaecyparissus	T	R	84.4
oxyria digyna	T	R	42.8		Santolina chamaecyparissus	T	O	33.9
oxyria digyna	T	O	52.3		Saponaria officinalis	T	R	59.3
Panax quinquefolius	T	O	78.8		Saponaria officinalis	T	O	80.4
Panicum miliaceum	T	R	52.6		Satureja hortensis	T	O	26.5
Passiflora caerulea	T	O	77.5		Satureja hortensis	T	R	23.0
Pastinaca sativa	T	R	52.0		Satureja montana	T	R	57.2
Pastinaca sativa	T	O	31.8		Satureja montana	T	O	43.5
Pennisetum alopecuroides	T	O	73.4		Satureja repandra	T	R	47.1
Pertoselinum crispum	T	R	65.2		Satureja repandra	T	O	66.3
Petasites Japonicus	T	R	31.3		Scuttellaria lateriflora	T	O	20.3
Petasites Japonicus	T	O	24.6		Scuttellaria lateriflora	T	R	33.8
Pertoselinum crispum	T	O	45.2		Secale cereale	T	R	28.5

Table 8
Cath L

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Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Phalaris canariensis	T	R	33.6		Senecio vulgaris	T	R	34.0
Phalaris canariensis	T	O	86.5		Setaria italica	T	R	40.7
Phaseolus vulgaris	T	O	57.0		Silene vulgaris	T	R	66.3
Physalis pruinosa	T	O	58.2		Silene vulgaris	T	O	99.7
Pimpinella anisum	T	O	95.9		Sium sisarum	T	O	90.7
Pimpinella anisum	T	R	91.7		Sium sisarum	T	R	39.6
Pisum sativum	T	R	30.5		Solidago sp	T	R	44.3
Pisum sativum	T	O	69.3		Solidago sp	T	O	73.6
Plantago major	T	O	93.8		Sonchus oleraceus	T	R	53.7
Plantago major	T	R	20.2		Sonchus oleraceus	T	O	36.9
Plectranthus sp.	T	R	44.4		Sorghum caffrorum	T	R	96.4
Plectranthus sp.	T	O	50.8		Sorghum caffrorum	T	O	80.1
Polygonum aviculare	T	R	47.9		Sorghum dochna	T	R	95.3
Polygonum aviculare	T	O	72.7		Sorghum dochna	T	O	70.3
Potentilla anserina	T	R	21.8		Sorghum dochna	T	R	98.5
Prunella vulgaris	T	R	84.3		Sorghum dochna	T	O	85.3
Prunella vulgaris	T	O	56.7		Sorghum durra	T	R	86.5
Pteridium aquilinum	T	R	32.6		Sorghum durra	T	O	81.7
Raphanus raphanistrum	T	R	68.6		Sorghum sudanense	T	R	34.7
Raphanus raphanistrum	T	O	77.0		Stachys affinis	T	O	75.7
Raphanus sativus	T	R	41.0		Stachys affinis	T	R	33.5
Raphanus sativus	T	O	63.1		Stachys byzantina	T	R	60.8
Frangula alnus	T	O	27.0		Stachys byzantina	T	O	77.5
Frangula alnus	T	R	45.3		Stellaria graminea	T	R	37.5
Ricinus communis	T	R	22.4		Stellaria graminea	T	O	54.7
Ricinus communis	T	O	72.0		Stellaria media	T	R	26.0
Ribes nigrum	T	R	50.5		Stellaria media	T	O	49.0
Ribes nigrum	T	O	70.1		Stipa capillata	T	R	43.4
Symphytum officinale	T	R	55.1		Urtica dioica	T	R	77.8
Symphytum officinale	T	O	64.0		Urtica dioica	T	O	75.6
Tanacetum cinerariifolium	T	O	65.5		Vaccinium angustifolium	T	O	58.6
Tanacetum parthenium	T	R	45.2		Vaccinium macrocarpon	T	R	20.1
Tanacetum parthenium	T	O	54.7		Vaccinium macrocarpon	T	O	41.7
Tanacetum vulgare	T	R	59.8		Veratrum viride	T	O	57.1
Tanacetum vulgare	T	O	86.0		Veratrum viride	T	R	26.6
Taraxacum officinale	T	O	100.0		Verbascum thapsus	T	O	72.8
Taraxacum officinale	T	R	91.3		Verbascum thapsus	T	R	56.0
Teucrium chamaedrys	T	O	60.8		Viburnum trilobum	T	R	49.5
Teucrium chamaedrys L.	T	R	69.2		Viburnum trilobum	T	O	56.8
Thymus fragantissimus	T	R	97.8		Vicia sativa	T	O	73.9
Thymus fragantissimus	T	O	81.7		Vicia villosa	T	R	79.2
Thymus praecox subsp arcticus	T	R	36.1		Vicia villosa	T	O	70.9
Thymus praecox subsp arcticus	T	O	31.8		Vinca minor	T	O	21.5
Thymus pseudolanuginosus	T	R	33.9		Vitis sp.	T	R	79.7
Thymus pseudolanuginosus	T	O	43.7		Vitis sp.	T	O	97.4
Thymus serpyllum	T	R	39.2		Zea mays	T	R	83.5
Thymus serpyllum	T	O	68.6		Zea mays	T	O	58.2
Thymus X citriodorus	T	O	70.9					
Thymus X citriodorus	T	R	46.1					
Tiarella cordifolia	T	O	72.0					
Tragopogon porrifolius	T	O	40.9					
Tragopogon porrifolius	T	R	20.5					
Triticosecala spp.	T	O	38.2					
Triticum aestivum	T	R	31.4					
Triticum aestivum	T	O	33.8					
Tropaeolum majus	T	R	29.2					
Tropaeolum majus	T	O	20.9					
Typha latifolia	T	R	67.0					
Typha latifolia	T	O	56.0					

Table 9 1
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Nom latin	Stress	Extrait	Inhibition		Nom latin	Stress	Extrait	Inhibition
Achillea millefolium	A	O	27.6					
Aconitum napellus	A	O	74.0		Coix Lacryma-Jobi	A	O	35.2
Acorus calamus	A	O	74.8		Coriandrum sativum	A	R	63.6
Actinidia arguta	A	R	28.1		Coriandrum sativum	A	O	84.4
Actinidia arguta	A	O	96.6		Cornus canadensis	A	O	58.6
Agropyron repens	A	O	98.0		Cornus canadensis	A	R	99.4
Alchemilla mollis	A	O	61.3		Crataegus sp	A	R	22.7
Alchemilla mollis	A	R	95.8		Crataegus submollis	A	O	45.4
Allium cepa	A	O	80.6		Cryptotaenia canadensis	A	R	26.3
Allium porrum	A	R	30.9		Cryptotaenia canadensis	A	O	29.1
Allium porrum	A	O	87.5		Cymbopogon citratus	A	O	45.2
Allium sativum	A	O	71.2		Cyperus esculentus	A	O	75.0
Allium schoenoprasum	A	O	78.2		Daucus carota	A	O	92.9
Allium Tuberosum	A	O	99.6		Dirca palustris	A	O	84.7
Aloe vera	A	R	60.0		Dirca palustris	A	R	94.2
Aloe vera	A	O	78.4		Dryopteris filix-mas	A	O	85.7
Althaea officinalis	A	O	98.1		Echinacea purpurea	A	O	89.8
Amaranthus retroflexus	A	R	37.4		Eleusine coracana	A	R	50.6
Amaranthus retroflexus	A	O	43.4		Eleusine coracana	A	O	58.7
Anethum graveolens	A	O	33.7		Fagopyrum esculentum	A	O	68.0
Angelica archangelica	A	R	36.0		Fagopyrum tataricum	A	O	20.3
Angelica archangelica	A	O	85.2		Fagopyrum tataricum	A	R	33.0
Apium graveolens	A	R	46.7		Foeniculum vulgare	A	O	40.3
Apium graveolens	A	O	88.8		Fragaria x ananassa	A	R	44.8
Aralia nudicaulis	A	R	79.0		Fragaria x ananassa	A	O	92.3
Aralia nudicaulis	A	O	98.5		Galinsoga ciliata	A	O	55.3
Arctium minus	A	R	24.6		Galium odoratum	A	O	88.4
Arctium minus	A	O	67.9		Gaultheria hispidula	A	R	61.6
Arctostaphylos uva-ursi	A	R	75.1		Gaultheria hispidula	A	O	87.1
Arctostaphylos uva-ursi	A	O	89.8		Glechoma hederacea	A	O	96.2
Armoracia rusticana	A	O	92.3		Glycine max	A	R	41.6
Aronia melanocarpa	A	O	60.1		Glycine max	A	O	100.0
Aronia melanocarpa	A	R	61.6		Glycyrrhiza glabra	A	R	50.8
Aronia melanocarpa	A	O	82.3		Glycyrrhiza glabra	A	O	90.2
Artemisia Absinthium	A	R	88.6		Guizotia abyssinica	A	R	23.1
Artemisia dracunculus	A	O	55.6		Guizotia abyssinica	A	O	94.8
Aster sp	A	R	50.7		Hamamelis virginiana	A	R	91.8
Atropa belladonna	A	O	89.4		Hedeoma pulegioides	A	O	93.3
Beckmannia eruciformis	A	R	86.0		Helleborus niger	A	O	82.9
Beckmannia eruciformis	A	O	96.2		Hordeum hexastichon	A	R	26.9
Beta vulgaris	A	R	69.3		Hyssopus officinalis	A	R	40.2
Beta vulgaris	A	O	87.6		Inula helenium	A	O	86.0
Beta vulgaris spp. Maritima	A	R	53.7		Ipomoea Batatas	A	R	25.6
Beta vulgaris spp. Maritima	A	O	84.2		Lathyrus sativus	A	R	26.9
Borago officinalis	A	O	38.6		Lathyrus sativus	A	O	84.9
Brassica napus	A	R	43.5		Lathyrus sylvestris	A	R	22.4
Brassica napus	A	O	84.4		Lathyrus sylvestris	A	O	93.4
Brassica oleracea	A	O	60.6		Laurus nobilis	A	O	64.2
Brassica rapa	A	R	62.1		Laurus nobilis	A	R	64.6
Brassica rapa	A	O	98.9		Leonurus cardiaca	A	O	90.0
Campanula rapunculus	A	O	77.0		Levisticum officinale	A	R	49.4
Canna edulis	A	R	32.0		Levisticum officinale	A	O	53.3
Capsella bursa-pastoris	A	R	71.4		Lotus corniculatus	A	R	67.4
Capsella bursa-pastoris	A	O	72.8		Lotus corniculatus	A	O	98.8
Capsicum annuum	A	R	39.0		Lycopersicon esculentum	A	R	30.1
Chaerophyllum bulbosum	A	O	86.6		Malva sylvestris	A	O	82.3
Chelidonium majus	A	O	90.3		Medicago sativa	A	R	44.0
Chenopodium bonus-henricus	A	O	38.8		Medicago sativa	A	O	94.4
Chenopodium quinoa	A	R	42.3		Melilotus albus	A	R	80.7

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Nom latin	Stress	Extrait	Inhibition		Nom latin	Stress	Extrait	Inhibition
Chenopodium quinoa	A	O	84.3		Melilotus albus	A	O	98.9
Cicer arietinum	A	O	91.1		Melissa officinalis	A	O	89.4
Cichorium intybus	A	R	21.0		Melissa officinalis	A	R	93.6
Cichorium intybus	A	O	94.8		Mentha piperita	A	O	60.1
Mentha piperita	A	R	60.8		Senecio vulgaris L.	A	R	80.9
Mentha pulegium	A	O	55.4		Setaria italica	A	R	30.0
Mentha spicata	A	O	97.0		Setaria italica	A	O	66.2
Mentha suaveolens	A	O	46.8		Sium Sisarum	A	R	30.0
Nepeta cataria	A	R	32.6		Sium Sisarum	A	O	93.3
Nepeta cataria	A	O	67.2		Solanum tuberosum	A	R	30.1
Nicotiana tabacum	A	R	34.1		Solanum tuberosum	A	O	79.8
Oenothera biennis	A	R	48.5		Solidago sp	A	R	43.7
Oenothera biennis	A	O	83.4		Solidago sp	A	O	72.1
Origanum majorana	A	O	63.2		Sonchus oleraceus	A	R	21.6
Origanum vulgare	A	R	62.2		Sonchus oleraceus	A	O	92.4
Origanum vulgare	A	O	90.0		Sorghum dochna	A	O	60.9
Panax quinquefolius	A	O	32.3		Sorghum durra	A	O	89.3
Panax quinquefolius	A	R	75.9		Stachys affinis	A	R	29.3
Panicum miliaceum	A	R	25.6		Stachys byzantina	A	R	28.3
Panicum miliaceum	A	O	45.1		Stellaria graminea	A	R	49.9
Pastinaca sativa	A	O	100.0		Stellaria graminea	A	O	87.6
Petasites japonicus	A	O	82.7		Stellaria media	A	R	25.7
Petroselinum crispum	A	R	50.2		Stellaria media	A	O	26.0
Petroselinum crispum	A	O	85.7		Tanacetum parthenium	A	R	64.6
Petroselinum crispum	A	O	92.2		Tanacetum vulgare	A	R	36.0
Phalaris canariensis	A	R	89.5		Tanacetum vulgare	A	O	85.7
Phaseolus vulgaris	A	R	22.1		Taraxacum officinale	A	R	36.9
Phaseolus Vulgaris	A	O	90.3		Taraxacum officinale	A	O	100.0
Pimpinella anisum	A	O	72.4		Teucrium chamaedrys	A	O	92.5
Plantago major	A	R	22.2		Thymus praecox subsp arcticus	A	O	50.1
Plantago major	A	O	99.8		Thymus serpyllum	A	R	27.3
Plectranthus sp.	A	R	73.5		Thymus serpyllum	A	O	88.9
Potentilla anserina	A	O	92.9		Thymus vulgaris	A	R	60.9
Pteridium aquilinum	A	O	81.9		Thymus vulgaris	A	O	74.3
Raphanus raphanistrum	A	O	70.2		Thymus x citriodorus	A	O	80.9
Raphanus sativus	A	R	28.4		Tragopogon porrifolius	A	R	43.2
Raphanus sativus	A	O	99.0		Tragopogon porrifolius	A	O	81.9
Rheum rhabarbarum	A	R	21.4		Tropaeolum majus	A	R	42.6
Rheum rhabarbarum	A	O	95.6		Tropaeolum majus	A	O	82.6
Ribes nigrum	A	R	59.3		Typha latifolia	A	O	49.5
Ribes nigrum	A	O	81.8		Typha latifolia	A	R	65.4
Ribes Sylvestre	A	O	98.6		Vaccinium Corymbosum	A	O	94.5
Ricinus communis	A	R	78.5		Vaccinium macrocarpon	A	O	94.1
Ricinus communis	A	O	90.2		Veratrum viride	A	O	78.4
Rosa rugosa	A	R	36.1		Verbascum thapsus	A	O	96.4
Rubus allegheniensis	A	O	59.3		Vicia sativa	A	O	98.7
Rubus canadensis	A	O	94.4		Vicia villosa	A	R	29.0
Rubus idaeus	A	R	58.4		Vicia villosa	A	O	97.6
Rubus idaeus	A	O	97.4		Vinca minor	A	O	74.6
Rumex Acetosa	A	O	83.9		Vitis sp.	A	R	82.1
Rumex acetosella	A	R	46.7		Vitis sp.	A	O	99.5
Rumex acetosella	A	O	90.9		Zea mays	A	R	24.4
Rumex crispus	A	R	32.9		Zea mays	A	O	99.2
Rumex crispus	A	O	91.8		Achillea millefolium	G	O	42.8
Rumex Scutatus	A	O	94.9		Aconitum napellus	G	O	37.1
Ruta graveolens	A	O	92.5		Acorus calamus	G	O	89.0
Salix purpurea	A	O	44.8		Actinidia arguta	G	R	35.5
Salix purpurea	A	R	68.1		Actinidia arguta	G	O	45.4
Salvia elegans	A	O	64.2		Adiantum pedatum	G	O	25.0

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Nom latin	Stress	Extrait	Inhibition		Nom latin	Stress	Extrait	Inhibition
Salvia officinalis	A	O	67.8		Agropyron repens	G	O	98.2
Salvia officinalis	A	R	85.4		Alchemilla mollis	G	O	65.5
Salvia sclarea	A	O	61.0		Alchemilla mollis	G	R	88.9
Santolina chamaecyparissus	A	R	54.1		Allium ampeloprasum	G	R	39.0
Santolina chamaecyparissus	A	O	63.1		Allium ampeloprasum	G	O	53.8
Satureja montana	A	O	75.6		Allium cepa	G	R	35.6
Scorzonera hispanica	A	O	62.7		Allium cepa	G	O	75.1
Scutellaria lateriflora	A	O	82.7		Allium sativum	G	O	82.4
Allium schoenoporasum	G	O	88.7		Daucus carota	G	O	57.3
Allium tuberosum	G	O	80.3		Dirca palustris	G	R	67.1
Aloe vera	G	R	28.8		Dirca palustris	G	O	97.2
althaea officinalis	G	O	94.5		Dryopteris filix-mas	G	O	52.2
Amaranthus retroflexus	G	R	35.3		Echinacea purpurea	G	O	74.4
Amaranthus retroflexus	G	O	73.8		Eleusine coracana	G	R	38.7
Anethum graveolens	G	O	52.0		Eleusine coracana	G	O	76.8
Angelica archangelica	G	R	39.0		Erigeron speciosus	G	R	26.8
Angelica archangelica	G	O	80.6		Erysimum perofskianum	G	R	59.8
Apium graveolens	G	R	37.7		Erysimum perofskianum	G	O	100.2
Apium graveolens	G	O	83.9		Fagopyrum esculentum	G	R	37.6
Aralia nudicaulis	G	O	86.7		Fagopyrum tartaricum	G	O	27.3
Aralia nudicaulis	G	R	89.5		Fagopyrum tartaricum	G	R	30.7
Arctium minus	G	R	27.1		Galinsoga ciliata	G	O	30.9
Arctium minus	G	O	93.4		Galinsoga ciliata	G	R	51.3
Arctostaphylos uva-ursi	G	R	73.3		Galium odoratum	G	O	96.9
Armoracia rusticana	G	O	53.8		Gaultheria hispidula	G	R	70.9
Aronia melanocarpa	G	R	73.2		Gaultheria hispidula	G	O	82.2
Aronia melanocarpa	G	O	81.2		Gaultheria procumbens	G	O	69.6
Artemisia absinthium	G	R	92.0		Glechoma hederacea	G	O	94.0
Artemisia dracunculus	G	R	36.0		Glycine max	G	R	76.1
Artemisia dracunculus	G	O	72.7		Glycine max	G	O	100.0
Asclepias incarnata	G	R	67.4		Glycyrrhiza glabra	G	R	33.3
Asclepias incarnata	G	O	87.0		Glycyrrhiza glabra	G	O	94.5
Asparagus officinalis	G	O	98.2		Guizotia abyssinica	G	R	41.5
Aster	G	O	37.4		Guizotia abyssinica	G	O	95.4
Aster sp	G	R	37.3		Hamamelis virginiana	G	O	79.7
Aster sp	G	O	81.3		Hamamelis virginiana	G	R	90.8
Beckmannia eruciformis	G	O	90.0		Helianthus strumosus	G	R	31.7
Beta vulgaris	G	O	29.0		Helianthus strumosus	G	O	39.4
Beta vulgaris	G	R	71.5		Helianthus tuberosus	G	R	31.5
Borago officinalis	G	O	36.4		Helianthus tuberosus	G	O	70.6
Brassica napus	G	R	26.6		Helichrysum thianschanicum	G	R	40.4
Brassica napus	G	O	98.8		Helichrysum thianschanicum	G	O	69.2
Brassica oleracea	G	O	97.8		Helleborus niger	G	R	43.8
Brassica rapa	G	R	25.3		Helleborus niger	G	O	90.6
Brassica rapa	G	O	67.8		Hordeum hexastichon	G	R	22.6
Calamagrostis arundiflora	G	R	23.2		Hordeum hexastichon	G	O	86.0
Campanula rapunculus	G	O	80.2		Hyssopus officinalis	G	R	25.8
Canna edulis	G	R	31.6		Inula helenium	G	O	82.2
Canna edulis	G	O	44.2		Lactuca sativa	G	R	28.5
Capsella bursa-pastoris	G	R	63.0		Lactuca sativa	G	O	95.5
Capsella bursa-pastoris	G	O	69.5		Lathyrus sylvestris	G	R	22.1
Carum carvi	G	O	32.3		Lathyrus sylvestris	G	O	79.5
Chaerophyllum bulbosum	G	R	30.7		Laurus nobilis	G	R	49.6
Chaerophyllum bulbosum	G	O	38.0		Laurus nobilis	G	O	72.3
Chelidonium majus	G	O	91.3		Lavandula angustifolia	G	O	57.6
Cicer arietinum	G	R	44.7		Lavandula angustifolia	G	R	65.2
Cicer arietinum	G	O	92.7		Ledum groenlandicum	G	R	35.1
Cichorium endivia subsp. Endivia	G	O	94.9		Ledum groenlandicum	G	O	97.9
Cichorium intybus	G	R	25.8		Leonurus cardiaca	G	O	99.9

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Nom latin	Stress	Extrait	Inhibition		Nom latin	Stress	Extrait	Inhibition
Cichorium intybus	G	O	95.8		Levisticum officinale	G	R	75.1
Circium arvense	G	O	73.0		Levisticum officinale	G	O	92.5
Circium arvense	G	R	96.5		Lotus corniculatus	G	R	25.7
Coix Lacryma-Jobi	G	O	57.4		Lotus corniculatus	G	O	98.5
Cornus canadensis	G	O	62.5		Lupinus polyphyllus	G	O	94.5
Cornus canadensis	G	R	68.0		Lupinus polyphyllus	G	R	99.9
Crataegus submollis	G	O	58.3		Lycopersicon esculentum	G	R	70.0
Crataegus submollis	G	R	73.2		Lycopersicon esculentum	G	O	90.2
Cymbopogon citratus	G	R	65.5		Malus hupehensis	G	R	44.8
Cymbopogon citratus	G	O	70.9		Malus hupehensis	G	O	82.9
Cyperus esculentus	G	O	85.0		Medicago sativa	G	R	26.2
Daucus carota	G	R	23.3		Medicago sativa	G	O	99.2
Melilotus alba	G	R	96.9		Ruta graveolens	G	R	46.4
Melilotus alba	G	O	99.0		Ruta graveolens	G	O	84.6
Melissa officinalis	G	O	33.2		Salix purpurea	G	O	32.4
Melissa officinalis	G	R	90.6		Salix purpurea	G	R	95.3
Mentha piperita	G	O	41.8		Salvia elegans	G	O	57.0
Mentha pulegium	G	O	38.7		Salvia officinalis	G	O	65.8
Mentha spicata	G	R	32.7		Salvia officinalis	G	R	94.9
Mentha spicata	G	O	80.1		Salvia sclarea	G	O	58.5
Mentha suaveolens	G	O	55.7		Sambucus ebulus	G	R	32.1
Nepeta cataria	G	R	93.1		Sambucus ebulus	G	O	67.7
Ocimum basilicum	G	O	75.6		Santolina chamaecyparissus	G	R	49.3
Oenothera biennis	G	R	42.9		Saponaria officinalis	G	R	22.3
Oenothera biennis	G	O	86.1		Saponaria officinalis	G	O	88.5
Origanum majorana	G	O	65.8		Satureja hortensis	G	O	73.3
Origanum vulgare	G	O	89.6		Satureja montana	G	O	74.8
Origanum vulgare	G	R	92.3		Scorzonera hispanica	G	R	43.1
Oryza Sativa	G	O	95.6		Scorzonera hispanica	G	O	52.1
Oxalis Deppei	G	O	86.8		Scutellaria lateriflora	G	O	92.0
Oxalis Deppei	G	R	87.8		Secale cereale	G	R	23.7
Oxyria digyna	G	R	20.8		Senecio vulgaris	G	R	29.1
Oxyria digyna	G	O	89.3		Setaria italica	G	R	21.9
Panax quinquefolius	G	R	52.7		Setaria italica	G	O	83.2
Panicum miliaceum	G	R	31.5		Silene vulgaris	G	R	24.1
Panicum miliaceum	G	O	94.4		Sium sisarum	G	R	37.9
Passiflora caerulae	G	R	21.1		Sium sisarum	G	O	100.0
Passiflora caerulae	G	O	60.6		solanum melongena	G	R	22.7
Pastinaca sativa	G	O	72.8		Solanum tuberosum	G	R	50.2
Pennisetum alopecuroides	G	R	30.6		Solanum tuberosum	G	O	73.3
Petasites japonicus	G	O	81.6		Solidago sp	G	R	32.9
Petroselinum crispum	G	R	62.9		Solidago sp	G	O	87.3
Petroselinum crispum	G	O	76.3		Sonchus oleraceus	G	R	37.8
Phalaris canariensis	G	O	22.0		Sonchus oleraceus	G	O	48.1
Phalaris canariensis	G	R	36.7		Sorghum dochna	G	R	43.1
Phaseolus vulgaris	G	R	65.5		Sorghum dochna	G	O	91.3
Phaseolus vulgaris	G	O	88.2		sorghum durra	G	R	56.4
Pimpinella anisum	G	O	46.2		sorghum durra	G	O	63.2
Pisum sativum	G	O	52.5		Sorghum sudanense	G	R	56.1
Plantago major	G	R	29.0		Sorghum sudanense	G	O	89.7
Plantago major	G	O	96.3		Stachys Affinis	G	R	27.9
Plectranthus sp.	G	R	54.5		Stachys byzantina	G	R	42.8
Polygonum aviculare	G	O	29.6		Stachys byzantina	G	O	72.1
Portulaca oleracera	G	R	50.9		Stellaria graminea	G	R	39.7
Potentilla anserina	G	O	92.5		Stellaria media	G	R	27.9
Poterium sanquisorba	G	O	74.2		Stellaria media	G	O	50.0
Prunella vulgaris	G	O	77.1		Symphytum officinale	G	O	43.5
Prunella vulgaris	G	R	91.8		Symphytum officinale	G	R	74.2
Pteridium aquilinum	G	O	87.5		Tanacetum cinerariifolium	G	O	72.2

Table 9
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Nom latin	Stress	Extrait	Inhibition		Nom latin	Stress	Extrait	Inhibition
Rhaphanus sativus	G	R	24.0		Tanacetum parthenium	G	R	67.9
Rhaphanus sativus	G	O	85.0		Tanacetum vulgare	G	R	49.5
Rheum rhabarbarum	G	R	22.9		Tanacetum vulgare	G	O	97.8
Rheum rhabarbarum	G	O	85.5		Taraxacum officinale	G	R	45.4
Ribes nidigrolaria	G	O	59.7		taraxacum officinale	G	O	100.0
Ribes nigrum	G	O	80.4		Teucrium chamaedrys	G	R	61.7
Ribes nigrum	G	R	81.5		Teucrium chamaedrys	G	O	89.8
Ribes Sylvestre	G	O	91.7		Thymus fragantissimus	G	O	64.0
Ricinus communis	G	R	27.0		Thymus fragantissimus	G	R	85.4
Ricinus communis	G	O	98.3		Thymus praecox subsp arcticus	G	R	28.3
Rosmarinus officinalis	G	O	27.5		Thymus praecox subsp arcticus	G	O	39.1
Rubus idaeus	G	R	38.7		Thymus serpyllum	G	R	28.4
Rubus idaeus	G	O	51.2		Thymus serpyllum	G	O	90.3
Rumex crispus	G	R	37.1		Thymus vulgaris	G	R	69.0
Rumex crispus	G	O	95.0		Thymus vulgaris	G	O	70.6
Rumex scutatus	G	O	88.5		Thymus x citriodorus	G	O	70.7
Tiarella cordifolia	G	O	88.4		Asclepias incarnata	T	R	86.7
Tropaelum majus	G	O	76.8		Aster	T	O	34.1
Typha latifolia	G	O	76.4		Aster sp	T	R	46.8
Typha latifolia	G	R	82.9		Aster sp	T	O	49.7
Vaccinium corymbosum	G	R	72.1		Atropa belladonna	T	O	71.7
Vaccinium corymbosum	G	O	95.4		Avena sativa	T	R	40.4
Vaccinium macrocarpon	G	O	95.3		Beta vulgaris	T	O	30.6
Veratrum viride	G	O	80.8		Beta vulgaris	T	R	41.7
Verbascum thapsus	G	R	27.3		Borago officinalis	T	R	59.2
Verbascum thapsus	G	O	91.3		Borago officinalis	T	O	76.5
Viburnum trilobum	G	O	68.5		Brassica napus	T	R	35.8
Viburnum trilobum	G	R	72.6		Brassica Napus	T	O	91.9
Vicia sativa	G	R	32.2		Brassica nigra	T	R	24.3
Vicia sativa	G	O	96.8		Brassica oleracea	T	O	83.8
Vicia villosa	G	R	29.7		Bromus inermis	T	O	69.6
Vicia villosa	G	O	98.7		Bromus inermis	T	R	91.2
Vinca minor	G	O	35.8		Calendula officinalis	T	R	34.5
Vitis sp.	G	R	77.5		Canna edulis	T	R	20.5
Vitis sp.	G	O	99.8		Canna edulis	T	O	73.5
Zea mays	G	O	54.2		Capsella bursa-pastoris	T	R	32.1
Zea mays	G	R	56.0		Capsella bursa-pastoris	T	O	75.1
Perilla frutescens	T	R	83.5		Carex morrowii	T	R	44.0
Achillea millefolium	T	O	89.0		Carex morrowii	T	O	94.3
Aconitum napellus	T	O	63.6		Carum carvi	T	R	20.5
Acorus calamus	T	O	94.2		Cerastium tomentosum	T	R	36.8
Actinidia arguta	T	R	52.4		Chaerophyllum bulbosum	T	R	23.0
Actinidia arguta	T	O	84.8		Chaerophyllum bulbosum	T	O	80.2
Adiantum pedatum	T	O	92.2		Chelidonium majus	T	O	94.3
Agrimonia eupatoria	T	O	39.2		Chenopodium quinoa	T	O	48.2
Agropyron rupens	T	O	97.3		Chenopodium quinoa	T	R	48.3
Alchemilla mollis	T	O	85.2		Cicer arietinum	T	R	25.6
Alchemilla mollis	T	R	96.8		Cicer arietinum	T	O	81.7
Allium ampeloprasum	T	R	33.5		Cichorium endivia subsp endivia	T	R	20.8
Allium ampeloprasum	T	O	94.1		Cichorium endivia subsp endivia	T	O	95.5
Allium cepa	T	R	54.4		Cichorium intybus	T	R	20.4
Allium cepa	T	O	100.0		Cichorium intybus	T	O	96.0
Allium sativum	T	O	76.5		Circium arvense	T	R	58.3
Allium schoenoprasum	T	O	87.0		Circium arvense	T	O	79.6
Allium tuberosum	T	R	53.6		Citrullus colocynthis	T	R	41.2
Allium tuberosum	T	O	98.7		Citrullus colocynthis	T	O	84.9
Aloe vera	T	R	43.7		Coriandrum sativum	T	O	38.4
Aloe vera	T	O	79.9		Coriandrum sativum	T	R	48.8
Althaea officinalis	T	O	95.8		Cornus canadensis	T	O	32.1

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Nom latin	Stress	Extrait	Inhibition		Nom latin	Stress	Extrait	Inhibition
Amaranthus caudathus	T	R	20.7		Cornus canadensis	T	R	80.2
Amaranthus caudathus	T	O	69.3		Crataegus sp	T	R	22.9
Amaranthus retroflexus	T	R	32.4		Crataegus submollis	T	O	81.5
angelica archangelica	T	R	44.2		Cryptotaenia canadensis	T	R	20.9
angelica archangelica	T	O	55.7		Cymbopogon citratus	T	R	40.5
Anthriscus cerefolium	T	O	96.1		Cymbopogon citratus	T	O	77.0
Apium graveolens	T	R	30.3		Cyperus esculentus	T	R	20.9
Aralia nudicaulis	T	R	68.2		Cyperus esculentus	T	O	72.0
Aralia nudicaulis	T	O	97.8		Dirca palustris	T	R	67.1
Arctium minus	T	O	92.9		Dirca palustris	T	O	82.2
Arctostaphylos uva-ursi	T	O	72.0		Dryopteris filix-mas	T	O	23.9
Arctostaphylos uva-ursi	T	R	79.8		Echinacea purpurea	T	O	92.2
Armoracia rusticana	T	O	88.0		Eleusine coracana	T	R	30.0
Aronia melanocarpa	T	R	74.9		Erysimum perofskianum	T	R	81.7
Aronia melanocarpa	T	O	80.0		Erysimum perofskianum	T	O	98.8
Artemisia absinthium	T	O	41.7		Fagopyrum esculentum	T	O	35.5
Artemisia absinthium	T	R	96.1		Fagopyrum tararicum	T	O	40.0
Artemisia dracunculus	T	O	96.2		Fagopyrum tataricum	T	R	30.1
Artium lappa	T	O	21.1		Foeniculum vulgare	T	O	21.0
Asclepias incarnata	T	O	81.5		Fpomoea batatas	T	O	98.6
Fragaria x ananassa	T	O	44.3		Menyanthes trifoliata	T	O	64.3
Galinsoga ciliata	T	R	49.4		Miscanthus sinensis Andress	T	R	36.1
Galinsoga ciliata	T	O	56.9		Miscanthus sinensis Andress	T	O	66.6
Galium odoratum	T	R	59.4		Nepeta cataria	T	O	23.6
Galium odoratum	T	O	95.3		Ocimum Basilicum	T	O	81.3
Gaultheria hispidula	T	R	37.9		Oenothera biennis	T	R	35.7
Gaultheria hispidula	T	O	78.5		Oenothera biennis	T	O	75.6
Gaultheria procumbens	T	O	85.7		Onobrychis viciifolia	T	R	44.5
Glechoma hederacea	T	O	95.9		Onobrychis viciifolia	T	O	90.7
Glycine max	T	O	96.8		Origanum vulgare	T	R	76.5
Glycine max	T	R	32.8		Origanum vulgare	T	O	82.9
Glycine max	T	O	100.0		Oryza sativa	T	O	51.4
Glycyrrhiza glabra	T	R	70.2		Oxalis Deppei	T	R	48.4
Glycyrrhiza glabra	T	O	90.3		Oxalis Deppei	T	O	73.4
Guizotia abyssinica	T	R	34.4		oxyria digyna	T	R	23.6
Guizotia abyssinica	T	O	97.9		oxyria digyna	T	O	92.5
Hamamelis virginiana	T	R	72.1		Panax quinquefolius	T	O	24.8
Hamamelis virginiana	T	O	77.1		Panax quinquefolius	T	R	36.6
Hedeoma pulegioides	T	O	34.7		Panicum miliaceum	T	R	26.9
Helianthus strumosus	T	R	20.6		Passiflora caerulea	T	R	55.3
Helianthus strumosus	T	O	57.2		Passiflora caerulea	T	O	77.6
Helianthus tuberosa	T	O	61.0		Pastinaca sativa	T	O	49.2
Helianthus tuberosus	T	R	46.9		Pastinaca sativa	T	O	82.9
Helichrysum angustifolium	T	O	23.5		Pennisetum alopecuroides	T	O	74.9
Helichrysum angustifolium	T	R	94.5		Petasites Japonicus	T	R	22.9
Helichrysum thianschanicum	T	R	98.1		Petasites Japonicus	T	O	79.5
Helleborus niger	T	O	26.2		Petroselinum crispum	T	O	61.1
Humulus lupulus	T	R	38.0		Petroselinum crispum	T	O	83.7
Humulus lupulus	T	O	93.8		Petroselinum crispum	T	R	99.0
Hyoscyamus niger	T	O	41.5		Phalaris canariensis	T	R	29.5
Hyssopus officinalis	T	R	44.6		Phalaris canariensis	T	O	67.2
Inula helenium	T	O	97.6		Phaseolus vulgaris	T	O	93.1
Juniperus communis	T	R	80.0		Physalis pruinosa	T	O	64.2
Koeleria glauca	T	O	94.7		Pimpinella anisum	T	R	59.0
Koeleria glauca	T	R	99.4		Pimpinella anisum	T	O	88.5
Lactuca sativa	T	O	94.0		Pisum sativum	T	O	75.4
Lathyrus Sativus	T	R	24.0		Plantago major	T	O	99.6
Lathyrus Sativus	T	O	33.0		Plectranthus sp.	T	R	49.4
Lathyrus sylvestris	T	O	43.1		Podophyllum peltatum	T	O	87.3

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Nom latin	Stress	Extrait	Inhibition		Nom latin	Stress	Extrait	Inhibition
Laurus nobilis	T	R	51.7		Polygonum aviculare	T	R	32.8
Laurus nobilis	T	O	87.2		Polygonum aviculare	T	O	53.9
Lavandula latifolia	T	R	75.5		Potentilla anserina	T	O	94.9
Lavendula angustifolia	T	R	81.9		Prunella vulgaris	T	O	76.4
Ledum groenlandicum	T	R	45.9		Prunella vulgaris	T	R	94.7
Ledum groenlandicum	T	O	99.5		Pteridium aquilinum	T	O	90.1
Lens culinaris subsp. Culinaris	T	R	28.0		Raphanus raphanistrum	T	R	39.5
Lens culinaris subsp. Culinaris	T	O	97.6		Raphanus raphanistrum	T	O	91.0
Levisticum officinale	T	R	51.4		Raphanus sativus	T	O	79.1
Levisticum officinale	T	O	87.8		Ribes nigrum	T	R	89.6
Lotus corniculatus	T	R	53.7		Ribes nigrum	T	O	95.4
Lotus corniculatus	T	O	97.4		Ribes Sylvestre	T	R	20.1
Lupinus polyphyllus	T	O	95.8		Ribes Sylvestre	T	O	97.4
Lupinus polyphyllus	T	R	99.3		Ricinus communis	T	R	26.5
Luzula sylvatica	T	R	29.5		Ricinus communis	T	O	92.4
Malus hupehensis	T	R	58.7		Rosa rugosa	T	O	41.6
Malus hupehensis	T	O	62.5		Rubus canadensis	T	O	96.4
Malus spp.	T	O	25.7		Rubus idaeus	T	R	44.8
Malva sylvestris	T	O	73.5		Rubus idaeus	T	O	88.7
Medicago sativa	T	R	46.2		Rumes scutatus	T	O	88.7
Medicago sativa	T	O	94.9		Rumex acetosella	T	R	40.9
Melilotus officinalis	T	O	99.4		Rumex acetosella	T	O	90.9
Melissa officinalis	T	R	91.0		Rumex crispus	T	R	33.4
Mentha piperita	T	O	86.8		Rumex crispus	T	O	89.3
Ruta graveolens	T	O	68.5		Triticum aestivum	T	R	26.6
Salix purpurea	T	R	37.1		Triticum aestivum	T	O	42.6
Salix purpurea	T	O	46.1		Tropaeolum majus	T	R	21.4
Salvia officinalis	T	O	67.7		Tropaeolum majus	T	O	81.5
Salvia officinalis	T	R	91.1		Typha latifolia	T	O	44.8
Sambucus canadensis	T	R	35.7		Typha latifolia	T	R	72.5
Sambucus canadensis	T	O	99.0		Urtica dioica	T	R	35.2
Sanguisorba minor	T	O	90.6		Urtica dioica	T	O	62.9
Santolina	T	O	62.7		Vaccinium angustifolium	T	R	27.4
Santolina	T	R	73.4		Vaccinium macrocarpon	T	R	78.0
Saponaria officinalis	T	O	93.2		Vaccinium macrocarpon	T	O	87.8
Satureja hortensis	T	R	43.1		Veratrum viride	T	O	90.2
Satureja hortensis	T	O	87.9		Verbascum thapsus	T	O	84.3
Satureja montana	T	R	55.1		Viburnum trilobum	T	R	45.2
Satureja montana	T	O	79.2		Viburnum trilobum	T	O	70.0
Satureja repandra	T	R	49.7		Vicia sativa	T	O	99.0
Satureja repandra	T	O	73.3		Vicia villosa	T	R	44.2
Scorzorera hipanica	T	O	63.3		Vicia villosa	T	O	98.3
Scuttellaria lateriflora	T	O	29.3		Vinca minor	T	O	21.5
Setaria italica	T	R	20.8		Vitis sp.	T	O	99.9
Silene vulgaris	T	O	96.8		Zea mays	T	R	31.7
Sium sisarum	T	R	27.4		Zea mays	T	O	90.2
Sium sisarum	T	O	88.8					
Solanum melongens	T	R	21.9					
Solidago sp	T	R	45.9					
Solidago sp	T	O	74.0					
Sonchus oleraceus	T	R	22.7					
Sonchus oleraceus	T	O	38.1					
Sorghum caffrorum	T	O	57.0					
Sorghum caffrorum	T	R	74.0					
Sorghum dochna	T	O	44.3					
Sorghum dochna	T	O	65.8					
Sorghum dochna	T	R	70.7					
Sorghum dochna	T	R	89.0					
Sorghum durra	T	R	39.6					

Table 9
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Nom latin	Stress	Extrait	Inhibition		Nom latin	Stress	Extrait	Inhibition
Sorghum durra	T	O	76.5					
Sorghum sudanense	T	O	40.5					
Stachys affinis	T	R	67.2					
Stachys affinis	T	O	86.6					
Stachys byzantina	T	R	85.7					
Stellaria graminea	T	O	43.3					
Stellaria graminea linné	T	R	39.2					
Stellaria media	T	R	21.1					
Stipa capillata	T	R	24.2					
Symphytum officinale	T	R	64.4					
Tanacetum parthenium	T	R	62.2					
Tanacetum vulgare	T	R	42.5					
Tanacetum vulgare	T	O	97.5					
Taraxacum officinale	T	R	47.5					
Taraxacum officinale	T	O	100.0					
Teucrium chamaedrys	T	R	40.0					
Thymus fragantissimus	T	O	93.7					
Thymus fragantissimus	T	R	97.3					
Thymus praecox subsp arcticus	T	O	46.0					
Thymus pseudolanuginosus	T	R	74.3					
Thymus serpyllum	T	O	88.6					
Thymus X citriodorus	T	R	66.4					
Thymus X citriodorus	T	O	97.8					
Tiarella cordifolia	T	O	94.9					
Tragopogon porrifolius	T	R	45.0					
Tragopogon porrifolius	T	O	72.0					
Triticosecale spp	T	R	27.8					
Triticosecale spp	T	O	87.8					

Table 10 1
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Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Achillea millefolium	A	O	21.9		Citrullus lanatus	A	R	26.3
Achillea millefolium	A	S	24.5		Coix Lacryma-Jobi	A	S	66.1
Aconitum napellus	A	O	25.8		Cosmos sulphureus	A	O	38.8
Adiantum pedatum	A	R	27.6		Cosmos sulphureus	A	S	20.7
Agrimonia eupatoria	A	V	26.0		Crataegus sp	A	O	84.1
Agropyron cristatum	A	R	21.0		Crataegus sp	A	R	23.6
Agropyron repens	A	S	23.4		Crataegus sp	A	S	21.7
Agropyron repens	A	R	28.2		Crataegus submollis	A	S	34.0
Agropyron repens	A	S	39.8		Cryptotaenia canadensis	A	V	22.1
Agrostis Stofonifera	A	O	38.9		Cucumis anguria	A	O	26.2
Alchemilla mollis	A	V	27.9		Cucumis Anguria	A	R	53.4
Alchemilla mollis	A	O	66.0		Cucumis melo	A	S	53.6
Alchemilla mollis	A	R	100.0		Cucumis sativus	A	R	53.3
Alchemilla mollis	A	S	23.5		Curcuma zedoaria	A	O	24.3
Alkanna tinctoria	A	S	26.2		Cymbopogon citratus	A	S	91.2
Allium Tuberosum	A	S	57.9		Datisca cannabina	A	S	55.7
Aloe vera	A	O	20.5		Daucus carota	A	R	100.0
Ambrosia artemisiifolia	A	O	29.1		Daucus carota	A	V	24.7
Amelanchier sanguinea	A	W	96.5		Daucus carota	A	O	37.9
Amelanchier sanguinea	A	V	52.4		Digitalis purpurea	A	S	34.0
Anethum graveolens	A	O	32.1		Dirca palustris	A	R	20.3
Anethum graveolens	A	W	22.8		Dirca palustris	A	S	27.9
Angelica archangelica	A	S	39.2		Dolichos Lablab	A	R	21.5
Anthemis nobilis	A	O	37.6		Dryopteris filix-mas	A	R	58.8
Anthemis nobilis	A	S	26.4		Dryopteris filix-mas	A	S	22.0
Anthemis tinctoria	A	O	31.9		Echinacea purpurea	A	O	38.2
Anthemis tinctoria	A	S	38.4		Echinacea purpurea	A	S	28.1
Apium graveolens	A	S	49.2		Eleusine coracana	A	S	20.7
Arctium minus	A	O	46.4		Erigeron canadensis	A	O	29.6
Arctostaphylos uva-ursi	A	R	100.0		Fagopyrum esculentum	A	S	29.3
Aronia melanocarpa	A	O	21.9		Fagopyrum tataricum	A	S	24.4
Aronia melanocarpa	A	W	78.4		Foeniculum vulgare	A	O	25.1
Aronia melanocarpa	A	V	100.0		Fragaria Xananassa	A	O	22.3
Aronia melanocarpa	A	R	29.0		Fragaria Xananassa	A	W	100.0
Aronia melanocarpa	A	O	33.6		Fragaria Xananassa	A	V	21.4
Artemisia dracunculus	A	W	89.2		Fragaria Xananassa	A	S	29.4
Ludoviciana	A	O	33.4		Fragaria Xananassa	A	V	21.6
Ludoviciana	A	S	20.7		Galinsoga ciliata	A	R	61.6
Aster sp	A	R	26.2		Galium odoratum	A	R	21.0
Beta vulgaris	A	R	100.0		Gaultheria hispidula	A	O	33.7
Beta vulgaris spp. Maritima	A	R	92.2		Gentiana lutea	A	R	52.1
Borago officinalis	A	S	22.6		Glechoma hederacea	A	O	21.8
Brassica napus	A	S	68.3		Glycine Max	A	S	81.3
Brassica napus	A	R	29.5		Glycyrrhiza glabra	A	W	100.0
Brassica nigra	A	S	32.6		Glycyrrhiza glabra	A	S	63.3
Brassica oleracea	A	O	22.9		Guizotia abyssinica	A	R	36.9
Brassica oleracea	A	V	20.8		Hamamelis virginiana	A	R	100.0
Brassica oleracea	A	R	22.2		Helianthus Tuberosus	A	S	32.1
Brassica rapa	A	S	23.2		Heliotropium arborescens	A	R	22.8
Brassica rapa	A	R	26.9		Heliotropium arborescens	A	S	24.9
Bromus inermis	A	O	34.1		Helleborus niger	A	S	25.6
Bromus inermis	A	R	21.9		Hordeum vulgare	A	O	58.1
Calamintha nepeta	A	O	35.4		Hypericum perforatum	A	S	24.8
Canna edulis	A	O	56.4		Hyssopus officinalis	A	O	21.1
Canna edulis	A	R	21.4		Hyssopus officinalis	A	S	93.6
Carum carvi	A	O	24.2		Lactuca serriola	A	S	34.3
Chaerophyllum bulbosum	A	O	25.5		Laurus nobilis	A	W	100.0
chenopodium bonus-henricus	A	R	24.0		Lavandula latifolia	A	W	57.1
Chenopodium bonus-henricus	A	S	85.8		Lavandula latifolia	A	O	43.7

Table 10 2
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Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Chenopodium quinoa	A	S	50.4		Lavandula latifolia	A	S	42.2
Chrysanthemum coronarium	A	O	26.0		Leonurus cardiaca	A	R	100.0
Cicer arietinum	A	S	23.3		Lepidium sativum	A	O	100.0
Cichorium intybus	A	S	32.1		Saccharum officinarum	A	R	23.8
Lolium multiflorum	A	O	31.0		Salvia elegans	A	O	100.0
Lolium perenne	A	O	20.8		Salvia officinalis	A	O	95.7
Lolium perenne	A	R	21.7		Salvia officinalis	A	W	77.9
Lolium perenne	A	S	22.1		Salvia officinalis	A	R	83.7
Malva sylvestris	A	S	22.9		Salvia officinalis	A	S	20.5
Matricaria recutita	A	O	28.5		Salvia sclarea	A	O	100.0
Melaleuca alternifolia	A	O	21.9		Salvia sclarea	A	V	28.6
Melissa officinalis	A	S	23.4		Santolina chamaecyparissus	A	O	27.1
Mentha piperita	A	O	31.6		Satureja montana	A	W	23.2
Mentha piperita	A	W	33.2		Satureja montana	A	S	27.7
Mentha pulegium	A	O	42.2		Scorzonera hispanica	A	R	60.1
Mentha pulegium	A	V	21.5		Scutellaria lateriflora	A	S	45.9
Mentha pulegium	A	S	33.8		Senecio vulgaris	A	R	34.0
Mentha spicata	A	O	24.3		Sonchus oleraceus	A	O	29.1
Oenothera biennis	A	O	25.2		Sorghum dochna	A	O	21.1
Oenothera biennis	A	R	76.8		Sorghum dochna	A	V	24.4
Origanum majorana	A	V	37.4		Sorghum durra	A	O	23.4
Oxyria digyna	A	V	28.2		Sorghum durra	A	V	23.6
Panicum miliaceum	A	O	33.3		Spinacia oleracea	A	S	26.8
Peucedanum cervaria	A	R	23.4		Stellaria graminea	A	O	24.8
Phalaris arundinacea	A	R	22.4		Symphytum officinale	A	O	91.6
Phalaris canariensis	A	O	27.8		Tanacetum cinerariifolium	A	R	28.3
Phaseolus coccineus	A	S	28.3		Tanacetum vulgare	A	O	46.3
Phaseolus mungo	A	R	37.8		Tanacetum vulgare	A	S	33.7
Phaseolus vulgaris	A	O	24.3		Taraxacum officinale	A	W	26.4
Phaseolus Vulgaris	A	S	74.3		Taraxacum officinale	A	V	24.0
Phleum pratense	A	R	27.8		Taraxacum officinale	A	O	21.0
Physalis ixocarpa	A	O	21.5		Teucrium chamaedrys	A	O	37.0
Physalis Ixocarpa	A	S	26.5		Thymus fragantissimus	A	W	20.2
Physalis Pruinosa	A	S	60.2		Thymus herba-barona	A	W	20.8
Phytolacca americana	A	S	100.0		Thymus vulgaris	A	R	77.9
Plantago coronopus	A	O	21.1		Thymus vulgaris	A	W	23.6
Plantago coronopus	A	S	25.7		Thymus x citriodorus	A	W	21.3
Plantago major	A	O	26.0		Thymus x citriodorus	A	S	21.1
Plectranthus sp.	A	O	23.1		Trichosanthes kirilowii	A	O	23.2
Poa pratensis	A	O	21.7		Trigonella foenum graecum	A	S	32.0
Polygonum aviculare	A	R	79.7		Triticum durum	A	S	22.0
Portulaca oleracae	A	O	34.5		Triticum turgidum	A	O	60.0
Poterium sanguisorba	A	R	25.8		Triticum spelta	A	S	47.6
Poterium sanguisorba	A	O	34.6		Urtica dioica	A	O	33.3
Poterium sanguisorba	A	W	31.0		Vaccinium augustifolium	A	W	42.6
Pteridium aquilinum	A	R	54.4		Vaccinium Corymbosum	A	W	22.4
Raphanus sativus	A	S	66.4		Vaccinium Corymbosum	A	S	21.6
Raphanus sativus	A	R	81.8		Vaccinium macrocarpon	A	W	22.5
Rheum officinale	A	S	37.9		Vaccinium macrocarpon	A	S	54.8
Ribes nigrum	A	W	100.0		Valerianella locusta	A	O	49.2
Ribes nigrum	A	S	47.6		Veronica officinalis	A	O	43.7
Ribes nigrum	A	V	27.5		Viburnum trilobum Marsh.	A	W	75.4
Ribes rubrum	A	R	35.4		Vitis	A	S	33.8
Ribes Sylvestre	A	W	100.0		Vitis	A	W	100.0
Rosa rugosa	A	W	95.1		Vitis	A	O	21.0
Rosa rugosa	A	R	24.6		Zea Mays	A	S	95.2
Rosmarinus officinalis	A	R	58.4		Achillea millefolium	G	O	28.8
Rubus idaeus	A	W	27.6		Achillea millefolium	G	S	27.3
Rubus idaeus	A	S	33.0		Aconitum napellus	G	O	23.1

Table 10
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Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Rubus idaeus	A	R	27.9		Aconitum napellus	G	R	97.7
Rubus idaeus	A	O	37.4		Acorus calamus	G	S	20.0
Rumex Acetosa	A	S	45.2		Adiantum pedatum	G	R	100.0
Rumex crispus	A	O	26.1		Agastache foeniculum	G	W	25.3
Rumex crispus	A	R	100.0		Ageratum conyzoides	G	O	28.5
Rumex Scutatus	A	V	43.8		Agropyron cristatum	G	R	37.3
Ruta graveolens	A	O	28.7		Agropyron repens	G	R	31.4
Saccharum officinarum	A	O	29.6		Fagopyrum esculentum	G	S	32.9
Alchemilla mollis	G	W	20.6		Fagopyrum tataricum	G	S	41.2
Alchemilla mollis	G	O	56.1		Foeniculum vulgare	G	V	25.7
Alchemilla mollis	G	R	28.1		Foeniculum vulgare	G	S	42.5
Alchemilla mollis	G	S	25.3		Foeniculum Vulgare	G	O	24.1
Allium cepa	G	O	20.2		Galinsoga ciliata	G	S	25.0
Allium sativum	G	O	100.0		Galium odoratum	G	R	89.4
Allium tuberosum	G	O	100.0		Gaultheria hispidula	G	O	35.1
Althaea officinalis	G	S	30.8		Gaultheria hispidula	G	R	67.2
Amaranthus caudatus	G	S	22.3		Gaultheria procumbens	G	S	74.7
Amelanchier sanguinea	G	W	88.3		Glycine max	G	R	24.6
Anethum graveolens	G	O	26.2		Glycyrrhiza glabra	G	W	56.8
Angelica archangelica	G	S	43.2		Glycyrrhiza glabra	G	V	30.0
Anthemis nobilis	G	S	21.7		Glycyrrhiza glabra	G	R	92.4
Arctostaphylos uva-ursi	G	O	33.1		Glycyrrhiza glabra	G	S	28.6
Arctostaphylos uva-ursi	G	R	100.0		Hamamelis virginiana	G	R	100.0
Arctostaphylos uva-ursi	G	S	23.4		Hamamelis virginiana	G	S	29.3
Armoracia rusticana	G	O	22.5		Hedeoma pulegioides	G	O	60.0
Aronia melanocarpa	G	W	79.0		Helenium hoopesii	G	O	37.3
Aronia melanocarpa	G	V	100.0		Helenium hoopesii	G	S	34.7
Aronia melanocarpa	G	S	22.7		Helianthus tuberosus	G	V	21.4
Aronia melanocarpa	G	O	29.6		Helichrysum thianschanicum	G	O	43.0
Artemisia absinthium	G	O	31.5		Helichrysum thianschanicum	G	R	39.2
Artemisia absinthium	G	V	24.2		Heliotropium arborescens	G	R	22.8
Aster	G	S	29.2		Heliotropium arborescens	G	S	39.5
Beckmannia eruciformis	G	O	22.7		Helleborus niger	G	S	34.2
Beta vulgaris	G	R	100.0		Hypericum henryi	G	S	23.7
Betula glandulosa	G	S	26.7		Hypericum perforatum	G	S	23.8
Borago officinalis	G	O	25.7		Hyssopus officinalis	G	W	45.1
Brassica Napus	G	S	50.4		Hyssopus officinalis	G	S	24.2
Brassica napus	G	R	48.2		Inula helenium	G	W	96.2
Brassica nigra	G	S	23.9		Ipomola batatas	G	V	21.9
Brassica oleracea	G	R	28.1		Lactuca sativa	G	W	35.1
Brassica oleracea	G	S	22.5		Laportea canadensis	G	O	25.1
Brassica rapa	G	R	56.4		Laportea canadensis	G	S	26.5
Calamintha nepeta	G	V	24.8		Laserpitium latifolium	G	S	22.1
Calamintha nepeta	G	O	38.8		Lathyrus sativus	G	O	29.9
Canna edulis	G	O	66.3		Lathyrus sativus	G	W	27.8
Capsella bursa-pastoris	G	R	25.8		Lathyrus sativus	G	S	28.1
Carthamus tinctorius	G	R	22.2		Laurus nobilis	G	W	100.0
Chelidonium majus	G	O	31.6		Lavandula angustifolia	G	O	65.7
Chenopodium album	G	S	21.3		Ledum groenlandicum	G	O	100.0
Cichorium endivia subsp. Endivia	G	S	21.4		Leonorus cardiaca	G	R	61.3
Cicer arietinum	G	S	50.7		Lepidium sativum	G	O	100.0
Cichorium endivia subsp. Endivia	G	O	48.5		Levisticum officinale	G	W	91.4
Cichorium endivia subsp. Endivia	G	S	27.9		Lolium perenne	G	O	37.3
Coix Lacryma-Jobi	G	O	24.5		Lotus tetragonolobus	G	S	21.8
Cornus canadensis	G	S	36.1		Lupinus polyphyllus	G	O	42.3
Crataegus sp	G	W	57.8		Malus hupehensis	G	S	25.9
Cucurbita Pepo	G	R	23.1		Medicago sativa	G	S	32.1
Curcuma zedoaria	G	O	24.0		Melaleuca alternifolia	G	O	40.0
Datura metel	G	O	21.0		Melissa officinalis	G	S	23.1

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Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Daucus carota	G	O	32.3		Mentha arvensis	G	S	65.5
Daucus carrota	G	R	90.9		Mentha piperita	G	O	24.2
Dipsacus sativus	G	O	32.7		Mentha piperita	G	S	23.7
Dirca palustris	G	S	33.5		Mentha piperita	G	V	34.2
Dolichos Lablab	G	R	32.1		Mentha pulegium	G	O	63.3
Dryopteris filix-mas	G	R	80.9		Mentha pulegium	G	V	30.2
Echinacea purpurea	G	S	63.0		Mentha spicata	G	S	45.9
Elymus junceus	G	R	25.9		Monarda didyma	G	S	47.7
Erigeron canadensis	G	O	43.0		Nepeta cataria	G	R	100.0
Erigeron speciosus	G	O	22.8		Nicotiana tabacum	G	O	75.8
Erigeron speciosus	G	S	24.2		Hordeum vulgare subsp. Vulgare	G	O	33.4
Erysimum perofskianum	G	O	20.8		Sambucus ebulus	G	R	48.6
Ocimum basilicum	G	O	40.1		Sanguisorba officinalis	G	R	100.0
Ocimum basilicum	G	S	27.9		Santolina chamaecyparissus	G	O	100.0
Oenothera biennis	G	O	26.3		Serratula tinctoria	G	S	56.8
Oenothera biennis	G	R	100.0		Satureja montana	G	O	34.1
Oenothera biennis	G	O	49.6		Scolymus hispanicus	G	R	37.9
Oenothera biennis	G	S	54.0		Scutellaria lateriflora	G	S	54.7
Origanum vulgare	G	W	100.0		Senecio vulgaris	G	R	35.3
Origanum vulgare	G	O	26.7		Solidago sp	G	S	22.6
Origanum vulgare	G	S	21.3		Sonchus oleraceus	G	O	23.7
Oryza Sativa	G	S	34.5		Sorghum caffrorum	G	V	27.1
Oxalis Deppei Lodd.	G	O	27.4		Sorghum dochna	G	S	40.7
Panicum miliaceum	G	O	25.3		Sorghum dochna	G	O	21.4
Pastinaca sativa	G	R	95.0		Sorghum sudanense	G	V	23.3
Petroselinum crispum	G	R	44.5		Sorghum sudanense	G	W	92.9
Petroselinum crispum	G	S	26.5		Stellaria graminea	G	O	25.4
Peucedanum cervaria	G	R	25.1		Stellaria media	G	O	30.4
Phaseolus coccineus	G	R	30.9		Stellaria media	G	R	22.0
Phaseolus coccineus	G	O	27.5		Tanacetum vulgare	G	O	57.3
Phaseolus mungo	G	R	24.3		Tanacetum vulgare	G	S	38.4
Phlox paniculata	G	S	37.9		Tanacetum vulgare	G	O	38.2
Physalis pruinosa	G	S	26.5		Tanacetum vulgare	G	W	26.3
Phytolacca americana	G	S	100.0		Taraxacum officinale	G	V	20.0
Pimpinella anisum	G	S	23.7		taraxacum officinale	G	O	28.0
Plantago coronopus	G	O	25.1		Thymus fragantissimus	G	R	79.9
Plantago major	G	O	25.0		Thymus fragantissimus	G	O	26.2
Plantago major	G	R	20.5		Thymus herba-barona	G	W	20.2
Plantago major	G	S	23.6		Thymus serpyllum	G	V	22.2
Poa compressa	G	O	28.5		Triticosecale spp.	G	S	29.7
Poa pratensis	G	O	37.5		Triticum durum	G	S	37.8
Polygonum aviculare	G	R	25.4		Triticum spelta	G	O	31.0
Polygonum pensylvanicum	G	O	21.3		Triticum spelta	G	S	37.9
Portulaca oleracea	G	O	28.0		Typha latifolia	G	S	27.5
Poterium sanguisorba	G	O	25.6		Urtica dioica	G	O	60.3
Poterium sanguisorba	G	V	21.9		Vaccinium corymbosum	G	S	33.2
Prunella vulgaris	G	O	23.4		Vaccinium angustifolium	G	S	43.7
Pteridium aquilinum	G	R	43.1		Vaccinium macrocarpon	G	W	57.8
Reseda odorata	G	O	46.5		Vaccinium macrocarpon	G	S	59.9
Rhaphanus sativus	G	S	32.6		Valerianella locusta	G	O	32.1
Rheum X cultorum	G	S	20.9		Veratrum viride	G	O	22.1
Ribes nidigrolaria	G	W	29.8		Verbascum thapsus	G	S	33.8
Ribes nidigrolaria	G	V	53.7		Viburnum trilobum	G	V	21.3
Ribes nigrum	G	V	20.3		Viburnum trilobum	G	W	73.0
Ribes Silvestre	G	W	91.6		Vicia faba	G	S	21.2
Ricinus communis	G	S	46.0		Vigna unguiculata	G	R	20.1
Rosmarinus officinalis	G	R	60.4		Vitis	G	V	26.0
Rubus idaeus	G	W	28.2		Vitis	G	W	66.1
Rubus occidentalis	G	R	93.6		Vitis	G	O	41.7

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Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Rubus occidentalis	G	O	40.0		Vitis	G	S	30.7
Rumex acetosella	G	V	24.3		Xanthium sibiricum	G	O	22.1
Rumex crispus	G	R	100.0		Zea mays	G	S	20.3
Rumex patientia	G	O	32.0		Abies lasiocarpa	T	S	22.4
Rumex scutatus	G	V	28.6		Achillea millefolium	T	S	21.1
Ruta graveolens	G	S	23.4		Aconitum napellus	T	O	100.0
Saccharum officinarum	G	O	30.2		Acorus calamus	T	S	21.0
Salix purpurea	G	S	24.8		Ageratum conyzoides	T	O	20.1
Salvia elegans	G	O	100.0		Agrimonia eupatoria	T	W	59.6
Salvia officinalis	G	W	52.4		Agropyron cristatum	T	R	53.4
Salvia officinalis	G	R	100.0		Agropyron repens	T	S	22.6
Salvia officinalis	G	O	100.0		Agrostis alba	T	O	25.3
Salvia sclarea	G	O	100.0		Alchemilla mollis	T	W	88.7
Salvia sclarea	G	V	23.0		Alchemilla mollis	T	O	42.6
Salvia sclarea	G	W	31.1		Alchemilla mollis	T	R	70.4
Sambucus ebulus	G	O	52.1		Citrullus colocynthis	T	S	35.5
Alchemilla mollis	T	S	31.2		*Citrus limettoides*	T	O	47.1
Allium ascalonicum	T	S	42.9		Citrus limon	T	S	26.2
Allium sativum	T	O	100.0		Citrus limon	T	O	73.9
Allium tuberosum	T	O	100.0		Citrus sinensis	T	V	25.2
Alpinia officinarum	T	O	21.9		Coix Lacryma-Jobi	T	O	32.7
Alpinia officinarum	T	S	100.0		Coix Lacryma-Jobi	T	S	31.4
Amaranthus candatus	T	S	36.0		*Corchorus olitorius*	T	O	24.4
Amaranthus gangeticus	T	S	66.8		Cornus canadensis	T	S	41.3
Ananas comosus	T	O	20.3		Crataegus sp	T	S	34.0
Ananas comosus	T	W	23.8		Crataegus submollis	T	S	39.6
Anethum graveolens	T	O	35.8		Curcuma longa	T	O	55.3
angelica archangelica	T	R	53.5		*Curcuma zedoaria*	T	O	24.4
Anthemis nobilis	T	O	45.3		Cydonia oblonga	T	V	35.2
Anthemis tinctorium	T	S	47.5		Cynara scolymus	T	O	41.2
Anthriscus cerefolium	T	O	20.5		Cynara scolymus	T	R	36.8
Arctium minus	T	O	54.1		Dactilis Glomerata	T	O	31.9
Arctostaphylos uva-ursi	T	O	28.1		Datura stramonium	T	S	25.9
Arctostaphylos uva-ursi	T	R	100.0		Daucus carota	T	R	92.3
Aronia melanocarpa	T	V	100.0		Daucus carota	T	O	31.0
Aronia melanocarpa	T	W	42.7		Dipsacus sativus	T	O	100.0
Aronia prunifolia	T	W	39.0		Dirca palustris	T	S	31.4
Artemisia absinthium	T	O	25.6		Dolichos lablab	T	O	23.1
Artemisia dracunulus	T	O	31.3		Dryopteris filix-mas	T	R	68.2
Artemisia dracunulus	T	S	22.3		Echinacea purpurea	T	S	38.2
Aster	T	S	20.9		Eleusine coracana	T	O	22.1
Avena sativa	T	S	100.0		Elymus junceus	T	R	37.9
Averrhoa carambola	T	O	25.8		*Erigeron speciosus*	T	O	35.0
Beta vulgaris	T	R	100.0		Erysimum perofskianum	T	O	22.6
Beta vulgaris	T	O	59.3		Erysimum perofskianum	T	S	23.2
Beta vulgaris	T	S	41.4		Fagopyrum esculentum	T	S	24.7
Betula glandulosa	T	S	61.8		Foeniculum vulgare	T	O	31.4
Boesenbergia rotunda	T	O	36.9		*Foeniculum vulgare*	T	V	69.1
Boesenbergia rotunda	T	S	42.5		Foeniculum vulgare	T	S	38.5
Boletus edulis	T	S	43.1		Fragaria x ananassa	T	O	50.4
Borago officinalis	T	S	36.3		Fragaria x ananassa	T	V	30.2
Brassica hirta	T	S	30.2		Fragaria x ananassa	T	S	28.4
Brassica juncea	T	R	41.4		Passiflora spp.	T	O	30.2
Brassica Napus	T	S	29.9		Passiflora spp.	T	V	59.4
Brassica napus	T	R	22.9		Passiflora spp.	T	S	24.4
Brassica oleracea	T	R	25.6		Fucus vesiculosus	T	O	42.7
Brassica oleracea	T	V	27.0		Galinsoga ciliata	T	R	49.3
Brassica oleracea	T	R	26.5		Gaultheria hispidula	T	W	36.9
Brassica rapa	T	R	24.8		*Gentiana macrophylla*	T	S	26.1

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Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Bromus inermis	T	O	27.8		Ginkgo biloba	T	V	27.1
Canna edulis	T	O	40.3		Glycyrrhiza glabra	T	W	58.1
Capsicum annuum	T	S	22.6		Glycyrrhiza glabra	T	S	50.4
Carex morrowii	T	O	26.0		Glycyrrhiza glabra	T	R	25.1
Carex morrowii	T	R	49.8		Gossypium herbaceum	T	O	22.7
Carya cordiformis	T	S	28.8		Gossypium herbaceum	T	S	27.3
Carya cordiformis	T	O	21.0		Guizotia abyssinica	T	S	38.5
Carya cordiformis	T	W	88.7		Hamamelis virginiana	T	O	37.1
Clematis armandii	T	O	20.1		Hamamelis virginiana	T	R	100.0
Chaerophyllum bulbosum	T	O	22.8		Hedeoma pulegioides	T	O	28.5
Chaerophyllum bulbosum	T	S	24.3		Hedeoma pulegioides	T	S	28.2
Agaricus bisporatus	T	S	25.4		Helenium hoopesii	T	O	31.7
Chelidonium majus	T	O	39.0		Helenium hoopesii	T	S	56.0
Chenopodium bonus-henricus	T	S	44.3		Helianthus tuberosus	T	V	23.7
chrysanthemum coronarium	T	O	33.4		Helichrysum thianschanicum	T	O	38.4
chrysanthemum coronarium	T	S	23.9		Helichrysum thianschanicum	T	R	27.0
Cichorium endivia subs. Endivia	T	O	44.3		Helleborus niger	T	S	32.1
Cichorium endivia subs. Endivia	T	S	20.5		Schizonepeta tenuifolia	T	O	29.1
Circium arvense	T	R	49.7		Schizonepeta tenuifolia	T	S	21.1
Citrullus colocynthis	T	R	37.0		Onobrychis viciifolia	T	O	42.6
Hibiscus cannabinus	T	O	39.9		Origanum vulgare	T	S	53.8
Hibiscus cannabinus	T	S	21.1		Oryza sativa	T	S	33.3
Humulus lupulus	T	S	54.8		Oxalis Deppei	T	O	30.8
Humulus lupulus	T	R	50.5		Panicum miliaceum	T	S	21.2
Hydrastis canadensis	T	O	20.9		Pastinaca sativa	T	S	53.9
Hypericum henryi	T	O	32.5		Pastinaca sativa	T	R	20.8
Hypericum perforatum	T	S	27.9		Pastinaca sativa	T	O	26.9
Hypericum sp	T	W	55.9		Petroselinum crispum	T	R	58.2
Hypomyces lactifluorum	T	S	42.7		Phaseolus coccineus	T	S	27.1
Iberis amara	T	S	100.0		Phaseolus vulgaris	T	W	37.9
Inula helenium	T	S	30.1		Phaseolus vulgaris	T	O	22.2
Ipomola batatas	T	V	27.4		Phaseolus vulgaris	T	S	23.2
Ipomola batatas	T	S	44.9		Phlox paniculata	T	S	21.3
Juniperus communis	T	S	57.8		Physalis pruinosa	T	S	35.2
Laportea canadensis	T	S	63.5		Phytolacca americana	T	S	100.0
Laurus nobilis	T	W	73.6		Plantago coronopus	T	O	21.2
Laurus nobilis	T	S	21.2		Plantago coronopus	T	S	48.2
Lavandula angustifolia	T	O	22.7		Poa pratensis	T	O	50.7
Lavandula angustifolia	T	S	25.1		Podophyllum peltatum	T	S	27.9
Lavandula latifolia	T	O	100.0		Polygonum chinense	T	S	25.0
Lavandula latifolia	T	S	28.5		Polygonum aviculare	T	O	26.0
Ledum groenlandicum	T	O	54.3		Polygonum aviculare	T	R	100.0
Lentinus edodes	T	S	25.7		Polygonum pensylvanicum	T	O	42.3
Leonurus cardiaca	T	R	24.3		Polygonum persicaria	T	O	28.8
Lepidium sativum	T	O	100.0		Populus incrassata	T	S	100.0
Levisticum officinale	T	R	41.2		Populus Tremula	T	S	48.5
Litchi chinensis	T	S	100.0		Populus X petrowskyana	T	S	44.1
Lolium multiflorum	T	O	24.0		Populus X petrowskyana	T	O	100.0
Lolium perenne	T	O	27.8		Populus X petrowskyana	T	W	72.0
Lonicera ramosissima	T	S	20.9		Portulaca oleracera	T	O	33.7
Lupinus polyphyllus	T	O	35.1		Poterium sanguisorba	T	W	100.0
Lupinus polyphyllus	T	S	20.5		Prunus spp.	T	S	39.6
Luzula sylvatica	T	R	22.6		Prunus persica	T	O	21.4
Majorana hortensis	T	V	20.1		Prunus persica	T	V	26.6
Malus spp.	T	V	37.8		Psidium guajava	T	V	37.7
Malus spp.	T	S	45.1		Psoralea corylifolia	T	S	51.5
Malus hupehensis	T	S	24.4		Pteridium aquilinum	T	R	76.2
Melaleuca alternifolia	T	O	26.7		Pteridium aquilinum	T	S	27.9
Melissa officinalis	T	S	20.7		Punica granatum	T	W	66.4

Table 10
HLE

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
mentha arvensis	T	R	34.0		Rehmannia glutinosa	T	O	83.0
Mentha piperita	T	S	60.1		Frangula alnus	T	S	40.7
Mentha pulegium	T	V	24.5		Raphanus sativus	T	R	36.5
Mentha pulegium	T	W	24.8		Raphanus sativus	T	S	22.4
Mentha spicata	T	O	24.4		Reseda luteola	T	S	23.6
Mentha suaveolens	T	S	28.9		Reseda odorata	T	O	20.3
Monarda didyma	T	O	54.7		Frangula alnus	T	R	65.3
Musa paradisiaca	T	O	21.4		Rheum officinale	T	O	100.0
Musa paradisiaca	T	W	32.8		Rheum officinale	T	S	33.3
nasturtium officinale	T	O	100.0		Rheum X cultorum	T	S	34.0
Nepeta cataria	T	O	60.1		Ricinus communis	T	S	27.5
Nepeta cataria	T	S	23.4		Ribes Grossularia	T	W	24.8
Nigella sativa	T	S	23.2		Ribes nidigrolaria	T	W	24.4
Agaricus bisporatus	T	S	25.8		Ribes nigrum	T	S	50.1
Psidium spp.	T	S	28.3		Ribes nigrum	T	V	23.8
Pleurotus spp.	T	S	31.6		Ribes nigrum	T	W	64.1
Citrus reticulata	T	V	32.7		Ribes Sylvestre	T	W	32.4
Citrus reticulata	T	S	29.4		Rosa rugosa	T	W	100.0
Ocimum Basilicum	T	V	30.7		Rosmarinus officinalis	T	R	75.8
Ocimum Basilicum	T	W	30.9		Rosmarinus officinalis	T	W	46.6
Ocimum Basilicum	T	O	39.1		Rubus idaeus	T	O	27.6
Oenothera biennis	T	S	29.6		Rubus idaeus	T	S	24.3
Oenothera biennis	T	O	24.2		Rubus idaeus	T	O	35.5
Oenothera biennis	T	R	58.6		Vaccinium angustifolium	T	S	33.7
Rubus occidentalis	T	R	93.2		Vaccinium macrocarpon	T	V	24.1
Rubus occidentalis	T	O	42.1		Vaccinium macrocarpon	T	W	30.3
Rubus occidentalis	T	S	20.5		Vaccinium macrocarpon	T	S	70.9
Rumex acetosella	T	V	44.9		Vaccinium macrocarpon	T	O	57.2
Rumex crispus	T	O	31.3		Valeriana officinalis	T	O	26.0
Rumex crispus	T	R	100.0		Valerianella locusta	T	O	53.7
Rumex crispus	T	S	20.8		Verbascum thapsus	T	O	22.8
Ruta graveolens	T	O	24.1		Verbascum thapsus	T	S	25.2
Serenoa repens	T	S	28.5		Veronica officinalis	T	O	29.9
Salvia officinalis	T	R	66.5		Vitis	T	S	39.1
Salvia officinalis	T	O	54.0		Vitis	T	O	40.0
Salvia officinalis	T	W	47.2		Vitis	T	W	23.5
Sambucus canadensis	T	S	23.2		Vitis	T	S	26.4
Sambucus canadensis	T	O	35.0		Weigela coraeensis	T	S	20.1
Sambucus canadensis	T	R	32.6		Weigela hortensis	T	S	25.3
Sambucus canadensis	T	W	54.0		Xanthium sibiricum	T	O	28.4
Sanguisorba minor	T	W	50.0		Zea mays	T	S	38.4
Santolina chamaecyparissus	T	O	75.8		Oenothera biennis	A	R	80.3
Santolina chamaecyparissus	T	R	33.3		Alchemilla mollis	T	R	96.0
Serratula tinctoria	T	S	36.3		Alchemilla mollis	A	R	87.2
Datura metel	T	O	36.9		Symphytum officinale	A	O	80.2
Datura metel	T	S	21.4		Fragariax ananassa	A	R	97.9
Satureja montana	T	O	100.0		Fragariax ananassa	G	R	93.8
Satureja montana	T	R	66.8		Vaccinium corymbosum	G	R	58.6
Satureja repandra	T	R	87.4		Vaccinium augustifolium	A	R	71.8
Scorzorera hispanica	T	R	42.3		Vaccinium augustifolium	G	R	53.6
Scorzorera hispanica	T	S	20.8		Vitis	A	R	62.5
Scutellaria lateriflora	T	S	36.6		Vitis	G	R	79.4
Sium sisarum	T	O	22.1		Petasites japonicus	A	R	56.5
Solanum melongena	T	O	22.4		Petasites japonicus	G	R	53.0
Solidago sp	T	S	22.6		Nicotiana rustica	G	O	61.1
Sonchus oleraceus	T	R	41.8		Pysalis ixocarpa	A	R	53.8
Sorghum caffrorum	T	O	23.0		Pteridium aquilinum	T	O	69.2
Sorghum dochna	T	O	30.3		Pteridium aquilinum	A	R	66.2
Sorghum dochna	T	O	53.5		Pteridium aquilinum	G	R	56.3

Table 10 8
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Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Sorghum durra	T	V	21.6		Pteridium aquilinum	G	O	56.2
Sorghum sudanense	T	V	23.7		Matteuccia pensylvanica	T	R	67.2
Stachys byzantina	T	O	25.3		Matteuccia pensylvanica	A	R	59.0
Stellaria graminea	T	O	27.6		Ocimum tenuiflorum	T	O	54.8
Stellaria graminea	T	S	36.7		Carthamus tinctorius	A	R	50.9
Stellaria media	T	O	22.6		Carthamus tinctorius	G	R	69.0
Stipa capillata	T	O	36.7		Ligustrum vulgare	T	O	87.0
Symphytum officinale	T	O	20.6		Ligustrum vulgare	A	O	76.2
Symphytum officinale	T	V	25.0		Ligustrum vulgare	G	O	85.7
Tanacetum cinerariifolium	T	R	24.9		Malva verticillata	T	R	80.1
Tanacetum vulgare	T	O	46.4		Malva verticillata	A	R	82.9
Tanacetum vulgare	T	S	32.0		Malva verticillata	G	R	82.4
Taraxacum officinale	T	O	63.1		Hamamelis virginiana	T	R	56.1
Thlaspi arvense	T	O	32.5		Arctostaphylos uva-ursi	T	R	74.8
Thymus fragantissimus	T	R	36.7		Arctostaphylos uva-ursi	G	R	86.0
Thymus fragantissimus	T	O	100.0		Vicia faba	T	O	84.6
Thymus praecox subsp arcticus	T	O	38.7		Sempervivum tectorum	T	O	57.3
Thymus pseudolanuginosus	T	R	21.5		Sempervivum tectorum	A	O	74.8
Thymus vulgaris	T	W	20.0		Sempervivum tectorum	G	O	52.3
Triticosecale spp.	T	O	26.0		Ajuga reptans	T	O	55.3
Triticum aestivum	T	O	20.9		Ajuga reptans	A	O	52.3
Triticum turgidum	T	O	49.4		Ajuga reptans	G	O	72.1
Triticum spelta	T	O	35.0		Phlox paniculata	T	O	66.2
Tropaeolum majus	T	S	23.5		Ligularia dentata	A	O	52.1
Tsuga diversifolia	T	S	34.3		Ligularia dentata	G	R	50.8
Tsuga mertensiana	T	S	32.8		Ligularia dentata	G	O	52.6
Typha latifolia	T	S	36.1		Achillea ptarmica	T	O	50.9
Urtica dioica	T	O	32.8		Potentilla fruticosa	G	R	98.6
Achillea ptarmica	A	O	54.3		Vernonia gigantea	A	R	50.4
Achillea ptarmica	G	O	64.3		Vernonia gigantea	A	O	62.3
Geranium pratense	T	R	93.4		Vernonia gigantea	G	R	51.2
Geranium pratense	A	R	98.5		Vernonia gigantea	G	O	50.7
Geranium pratense	G	R	97.4		Penstemon digitalis	T	R	64.5
Thalictrum aquilegiifolium	T	O	53.6		Penstemon digitalis	A	R	63.5
Thalictrum aquilegiifolium	G	O	60.4		Penstemon digitalis	A	O	57.3
Veronica spicata	T	O	55.9		Penstemon digitalis	G	R	63.4
Veronica spicata	A	O	59.2		Penstemon digitalis	G	O	67.8
Veronica spicata	G	O	56.2		Malus spp.	T	R	56.1
Helenium spp.	T	O	55.7		Malus spp.	T	O	56.7
Salvia sylvestris	T	O	77.4		Malus spp.	A	R	50.8
Salvia sylvestris	A	O	66.9		Malus spp.	G	R	51.2
Salvia sylvestris	G	O	55.0		Hosta sieboldiana	G	O	50.9
Salvia regeliana	T	O	62.6		Hamamelis mollis	T	R	99.1
Crambe cordifolia	G	R	56.3		Hamamelis mollis	A	R	94.1
Crambe cordifolia	G	O	56.7		Hamamelis mollis	G	R	89.4
Rudbeckia maxima	G	O	68.4		Chaenomeles x superba	T	R	56.2
Trollius x cultorum	T	R	97.6		Chaenomeles x superba	A	R	71.9
Trollius x cultorum	A	R	93.2		Chaenomeles x superba	G	R	66.6
Trollius x cultorum	G	R	100.1		Chaenomeles x superba	G	O	52.0
Amsonia tabernaemontana	A	R	53.2		Centaurea dealbata	T	R	50.9
Oenothera fruticosa spp.	T	R	109.8		Centaurea dealbata	A	R	74.1
Oenothera fruticosa spp.	T	O	61.3		Paeonia spp.	T	R	79.8
Oenothera fruticosa spp.	A	R	97.5		Paeonia spp.	T	O	58.6
Oenothera fruticosa spp.	G	R	105.9		Paeonia spp.	A	R	79.6
Veronica austriaca ssp teucrium	T	O	68.6		Paeonia spp.	A	O	58.5
Veronica austriaca ssp teucrium	G	O	58.1		Paeonia spp.	G	R	82.0
Coreopsis verticillata	T	R	55.6		Paeonia spp.	G	O	60.0
Coreopsis verticillata	G	O	70.4		Lysimachia clethroides	T	R	83.3
Potentilla fruticosa	T	R	104.8		Lysimachia clethroides	T	O	64.3
Potentilla fruticosa	A	R	99.4		Lysimachia clethroides	G	R	85.8

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Nom latin	Stress	Extrait	Inhibition (%)	Nom latin	Stress	Extrait	Inhibition (%)
Lysimachia clethroides	G	O	67.8	Viburnum plicatum	G	R	57.9
Magnolia x loebneri	T	R	61.4	Buxus microphylla	T	R	58.0
Iberis sempervirens	T	O	62.4	Astilboides tabularis	T	R	104.2
Iberis sempervirens	G	O	63.8	Astilboides tabularis	A	R	108.1
Filipendula vulgaris	T	R	98.3	Astilboides tabularis	G	R	100.3
Filipendula vulgaris	A	R	94.5	Staphylea trifolia	A	R	63.6
Filipendula vulgaris	G	R	96.3	Bergenia x schmidtii	T	R	100.5
Geranium sanguineum	T	R	89.4	Bergenia x schmidtii	A	R	113.7
Geranium sanguineum	T	O	63.3	Bergenia x schmidtii	G	R	99.3
Geranium sanguineum	A	R	82.6	Rodgersia podophylla	T	R	68.9
Geranium sanguineum	A	O	53.2	Rodgersia podophylla	A	R	59.4
Garanium sanguineum	G	R	88.8	Rodgersia podophylla	G	R	56.5
Garanium sanguineum	G	O	57.7	Geranium phaeum	T	R	92.7
Philadelphus coronarius	A	O	55.5	Geranium phaeum	A	R	84.3
paeonia suffruticosa	T	R	58.9	Geranium phaeum	G	R	101.0
paeonia suffruticosa	T	O	52.1	Rubus pubescens	T	R	71.5
Paeonia suffruticosa	A	R	73.8	Rubus pubescens	A	R	76.2
Paeonia suffruticosa	A	O	52.2	Rubus pubescens	G	R	82.8
Paeonia suffruticosa	G	R	58.7	Taxus x media	T	R	60.1
Paeonia suffruticosa	G	O	50.4	Taxus x media	A	R	61.6
Dahlia spp.	T	R	77.4	Taxus x media	G	R	52.3
Begonia convolvulacea	T	O	69.8	Geranium x cantabrigiense	T	R	106.1
Begonia convolvulacea	A	O	67.5	Geranium x cantabrigiense	A	R	94.2
Begonia convolvulacea	G	O	72.6	Geranium x cantabrigiense	G	R	95.9
Begonia eminii	T	O	72.8	Fuchia magellanica	T	R	100.2
Begonia eminii	A	O	77.2	Fuchia magellanica	A	R	91.9
Begonia eminii	G	O	75.4	Fuchia magellanica	G	R	102.2
Begonia glabra	T	O	82.3	Microbiata decussata	A	R	51.5
Begonia mannii	A	O	82.5	Microbiata decussata	G	R	51.9
Begonia mannii	G	O	72.8	Rhododendron spp.	G	R	51.2
Begonia polygonoides	T	O	79.0	Stephanandra incisa	T	R	102.5
Begonia polygonoides	A	O	74.8	Stephanandra incisa	A	R	104.6
Begonia polygonoides	G	O	73.2	Stephanandra incisa	G	R	99.1
Fushia spp.	T	R	76.6	Corylus maxima	A	R	50.8
Fushia spp.	A	R	70.7	Corylus maxima	G	R	57.1
Fushia spp.	G	R	76.9	Cyperus alternifolius	G	R	56.2
Butomus umbellatus	A	O	58.8	Soleirolia soleirolii	A	R	51.2
Onoclea sensibilis	G	O	54.7	Soleirolia soleirolii	G	R	68.0
Onoclea sensibilis	G	R	50.1	Strelitzia reginae	T	R	106.5
Pinus cembra	A	R	83.2	Strelitzia reginae	A	R	94.3
Pinus cembra	G	R	76.3	Strelitzia reginae	G	R	111.7
Cornus sericea	T	R	104.0	Hedychium coronarium	T	R	53.5
Cornus sericea	A	O	53.4	Hedychium coronarium	A	R	86.9
Cornus sericea	A	R	91.8	Hedychium coronarium	G	R	74.6
Cornus sericea	G	O	51.0	Strelitzia reginae	T	R	78.6
Cornus sericea	G	R	98.5	Strelitzia reginae	A	R	78.0
Hydrangea quercifolia	T	R	58.1	Strelitzia reginae	G	R	107.3
Solidago caesia	T	R	60.7	Symphoricarpos orbiculatus	G	R	58.7
Solidago caesia	A	R	60.5	Rodgersia spp.	A	R	59.5
Cornus alba	T	R	98.9	Rodgersia spp.	G	R	59.0
Cornus alba	A	R	106.7	Lamiastrum galeobdolon	T	R	91.5
Cornus alba	G	R	85.3	Astilbe x arendsii	A	R	84.5
Carpinus caroliniana	T	R	95.4	Clematis alpina	A	R	54.4
Carpinus caroliniana	A	R	86.2	Stewartia pseudocamellia	T	R	75.5
Carpinus caroliniana	G	R	94.5	Stewartia pseudocamellia	A	R	84.1
Astilbe chinensis	T	R	54.3	Stewartia pseudocamellia	G	R	81.3
Astilbe chinensis	G	R	50.3	Pinus mugo	T	R	58.9
Symphoricarpos albus	G	R	52.0	Pinus mugo	A	R	53.7
Euphorbia amygdaloides	T	R	103.8	Pinus mugo	G	R	61.7
Euphorbia amygdaloides	A	R	75.2	Rubus thibetanus	T	R	97.6
Euphorbia amygdaloides	G	R	71.3	Rubus thibetanus	A	R	97.9
Viburnum plicatum	A	R	61.0	Rubus thibetanus	G	R	95.4

Table 10
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Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Rubus arcticus	T	R	89.3					
Rubus arcticus	A	R	85.5					
Rubus Phoenicolasius	G	R	93.2					
ribes americanum	T	R	70.4					
Passiflora spp.	T	O	62.4					
Rubus occidentalis	T	R	70.9					
Nicotiana tabacum	G	O	60.9					
Beta vulgaris	T	O	71.3					

Table 11
Clostripain

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Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Achidinia arguta	A	R	34.1		pastinaca sativa	G	S	44.7
Anthoxanthum odoratum	A	R	35.0		Phaseolus vulgaris	G	O	36.7
Apocynum cannabinum	A	R	47.6		Pteridium aquilinum	G	O	22.2
Arctium minus (Hill) Bernhardi	A	R	34.5		Solidago sp ?	G	S	40.8
Beckmannia erucaeformis	A	O	47.3		Symphytum officinale	G	S	22.7
Beta vulgaris	A	O	37.2		Tanacetum vulgare	G	S	31.4
Brassica rapa	A	O	24.6		Thymus fragantissumus	G	O	20.1
Buddleja davidii	A	R	27.6		Urtica dioica	G	O	32.6
Bupleurum falcatum	A	O	34.6		Zea mays	G	O	22.4
Capsicum annuum	A	S	36.8		Abies balsamea	T	O	38.6
Capsicum annuum	A	R	24.9		Allium ampeloprasum	T	S	30.3
Cotinus coggygria	A	R	21.0		Allium sativum	T	O	55.5
Kolkwitzia amabilis	A	R	27.9		Amaranthus gangeticus	T	R	75.4
Laserpitium latifolium	A	R	20.4		Apium graveolens	T	R	21.7
Lindera benzoin	A	R	38.6		Aralia cordata	T	S	48.2
Lolium perenne	A	S	34.7		Asclepias tuberosa	T	O	20.2
Miscanthus sacchariflorus	A	O	39.9		Asctinidia chinensis	T	O	47.7
Ophiopogon japonicus	A	R	20.5		Baptisia tinctoria	T	O	50.4
Phaseolus mungo	A	S	30.0		Betula alleghaniensis	T	R	24.9
Phaseolus Vulgaris	A	O	36.4		Brassica oleracea	T	R	21.4
Phaseolus Vulgaris	A	R	23.4		Brassica rapa	T	R	30.5
Plumbago zeylanica	A	O	26.5		Caladium sp.	T	O	39.8
Portulacea oleracea	A	O	22.2		Carica papaya	T	R	23.8
Salix purpurea F. Gracilis	A	R	38.6		Chaerophyllum bulbosum	T	R	24.3
Solanum melanocerasum	A	S	26.0		Chrysanthenum coronarium	T	O	32.7
Stellaria media (linné) Cyrillo	A	O	31.6		Clematis chiisanensis	T	R	21.6
Tanacetum vulgare	A	S	35.3		Coccoloba caracasana	T	O	40.1
Tanacetum vulgare	A	O	35.4		Cocos nucifera	T	R	22.5
Trifolium incarnatum	A	S	22.0		Cornus mas	T	R	34.2
Vaccinum augustifolium	A	O	34.0		Cucurbita pepo	T	S	24.9
Zea Mays	A	O	21.9		Cymbopogon citratus	T	O	20.4
Aframomum melegueta	G	O	27.9		Forsythia x intermedia	T	S	44.0
Allium sativum	G	O	35.3		Heliotropium arborescens	T	O	27.1
Anthemis nobilis	G	O	35.8		Lonicera ramosissima	T	O	34.9
Anthurium guildingii	G	O	55.2		Malus pranifolia	T	R	23.6
Astilbe x arendsii	G	R	25.6		Marrubium vulgare	T	R	49.3
Beta vulgaris	G	R	28.0		Miscanthus sinensis Anchess	T	R	26.9
Campanula rapunculus	G	S	24.5		Nephelium longana ou Euphoria longana	T	O	42.6
Cirsium arvense	G	R	30.0		Psoralea corylifolia	T	S	54.0
Cissus discolor	G	O	40.8		Raphanus sativus	T	O	21.4
Coccoloba caracasana	G	R	24.9		Ribes Nigrum	T	R	40.9
Convallaria majalis	G	R	28.5		Rubus thibetanus	T	R	24.2
Cucurbita pepo	G	O	20.9		Rumex acetosella linné	T	O	35.2
Cucurbita pepo	G	S	42.5		Sechium edule	T	R	25.6
Errhenatherum elatius	G	S	21.6		Stachys macrantha	T	O	25.9
Filipendula rubra	G	R	44.3		Tepary	T	R	34.9
Galium odoratum	G	O	31.2		Thymus vulgaris "Argenteus"	T	O	25.3
Glycyrrhiza glabra	G	O	27.6		Trifolium pratense	T	R	31.3
Hedychium sp.	G	O	35.6		Trollius x cultorum	T	R	26.5
Houttuynia cordata	G	O	30.2		Uvularia perfoliata	T	R	38.3
Lactuca sativa	G	O	28.8		Vaccinum macrocarpon	T	O	39.2
Lactuca sativa	G	O	21.6		Verbena officinalis	T	R	46.2
Lotus tetragonolobus	G	S	42.9		Zea mays	T	R	32.5
Lycopersicon esculentum	G	R	32.3		Myrica pensylvanica	G	O	22.7
Lysimachia clethroides	G	R	22.7		N	G	O	24.4
Magnolia stellata	G	R	23.6		Nicotiana tabacum	G	R	22.8
Microlepia platyphylla	G	O	21.0		Paeonia	G	R	31.3
Miscanthus sacchariflorus	G	R	25.6		Pastinaca sativa	G	R	29.2

Table 12
Subtilisin

Nom latin	Stress	Extrait	Inhibition (%)		Nom latin	Stress	Extrait	Inhibition (%)
Actaea racemosa	A	O	20.6		Rumes scutatus	T	S	21.4
Alchemilla mollis	A	S	23.5		Solidago Hybrida	T	O	34.5
Borago officinalis	A	S	20.5		Tanacetum balsamila	T	O	33.9
Capsicum annuum	A	S	24.7		Vaccinum macrocarpon	T	O	81.2
Cornus canadensis L.	A	S	22.6		Xanthium sibiricum	T	S	31.7
Genista multibracteata	A	R	21.3		Zea mays	T	S	28.3
Glycine max	A	S	26.0					
Lolium perenne	A	S	75.9					
Matricaria recutita	A	S	23.2					
Phaseolus Vulgaris	A	O	34.7					
Prunus Tomentosa	A	R	20.4					
Scuttellaria lateriflora	A	O	33.5					
Solidago canadensis	A	O	42.0					
Spinacia oleracea	A	S	100.0					
Tanacetum vulgare	A	S	42.4					
Tanacetum vulgare	A	O	26.7					
Typha latifolia L.	A	O	24.9					
Zea mays	A	S	20.9					
Zea Mays	A	O	34.7					
Adiantum pedatum	G	S	22.4					
Cichorium endivia	G	O	26.7					
Cucurbita pepo	G	O	20.8					
Echinacea purpurea	G	O	27.6					
Lactuca sativa	G	O	36.4					
pastinaca sativa	G	S	52.1					
Pastinaca sativa	G	S	20.1					
Ribes nigrum	G	O	41.2					
Symphytum officinale	G	O	30.0					
Urtica dioica	G	O	38.2					
Vitis sp.	G	S	22.3					
Alchemilla mollis	T	S	22.6					
Althacea officinalis	T	O	33.5					
Althaea officinalis	T	S	53.5					
Aralia cordata	T	S	21.0					
Asctinidia chinensis	T	O	38.6					
Astilboides tabularis	T	O	41.0					
Averrhoa carambola	T	S	20.9					
Baptisia tinctoria	T	O	25.5					
Beta vulgaris	T	S	24.2					
Convallaria majalis	T	O	48.2					
Datura stramonium	T	O	27.3					
Dioscorea batatas	T	S	36.4					
Eleusine coracana	T	S	26.2					
Fragaria x ananassa	T	O	39.5					
Ginkgo biloba	T	O	98.8					
Heliotropium arborescens	T	O	35.2					
Hibiscus cannabinus	T	S	25.2					
Hypericum perforatum	T	O	30.3					
Ipomea batatas	T	S	22.1					
Lathyrus sylvestris	T	S	21.8					
Lonicera ramosissima	T	O	29.6					
Lonicera ramosissima	T	S	39.9					
Lonicera syringantha	T	R	31.1					
Madia sativa	T	O	27.5					
Monarda	T	O	28.2					
Ocimum Basilicum	T	S	27.2					
Peucedanum oreaselinum	T	S	29.2					
Psoralea corylifolia	T	S	20.9					
Rahmnus frangula	T	O	26.4					
Raphanus sativus	T	S	25.5					
Rheum rhabarbarum	T	S	21.6					
Ribes Nigrum	T	R	28.9					
Rubus occidentalis	T	S	22.8					

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. An extract from a plant, which inhibits the activity of one or more extracellular proteases, wherein the extract has been prepared by the steps of harvesting plant material, treating plant material with a solvent, separating the resulting extract from the solid material, testing an aliquot of the extract against a panel of extracellular proteases, and retaining the extract if it inhibits the activity of one or more extracellular proteases.

2. A library of extracts from plants wherein each extract inhibits the activity of one or more extracellular proteases.

3. A library of plant extracts formed by a process comprising:
   (a) contacting plant material with either an aqueous, ethanolic, or an organic solvent;
   (b) isolating an extract from said plant material;
   (c) analysing said extract for the presence of one or more inhibitory activities against an extracellular protease;
   (d) and collected two or more extracts together, so as to form a library of plant extracts wherein each extract inhibits one or more extracellular proteases.

4. An extract from a plant, which inhibits the activity of one or more extracellular proteases, wherein said plant has been stressed prior to generating the extract.

5. A library of extracts derived from plants wherein each extract inhibits the activity of one or more extracellular proteases and wherein said plants have been stressed prior to generating the extract.

6. An extracellular protease inhibitor derived from a plant comprising the steps of:
   (a) contacting plant material with either an aqueous, ethanolic, or an organic solvent;
   (b) isolating an extract from said plant material;
   (c) analysing said extract for the presence of one or more inhibitory activities against a panel of extracellular proteases;

(d) further purifying a compound from said extract if said extract demonstrates the inhibition of one or more extracellular proteases greater than about 20%.

7. A method for increasing the levels of extracellular protease inhibitors in plants comprising the step of stressing the plant prior to forming a plant extract.

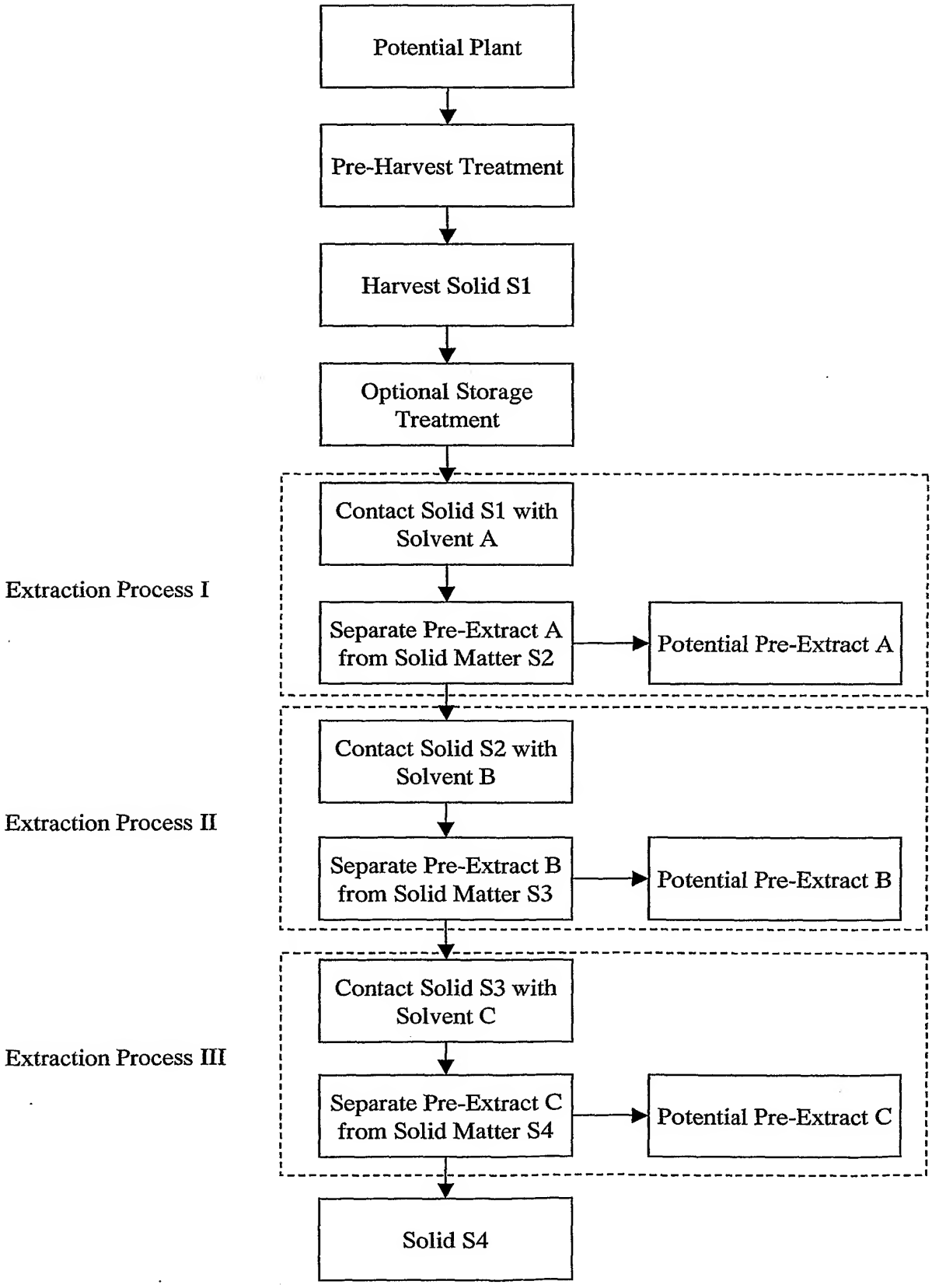
Potential Plant
Pre-Harvest Treatment
Harvest Solid S1
Optional Storage Treatment
Extraction Process I
Contact Solid S1 with Solvent A
Separate Pre-Extract A from Solid Matter S2
Potential Pre-Extract A
Extraction Process II
Contact Solid S2 with Solvent B
Separate Pre-Extract B from Solid Matter S3
Potential Pre-Extract B
Extraction Process III
Contact Solid S3 with Solvent C
Separate Pre-Extract C from Solid Matter S4
Potential Pre-Extract C
Solid S4

FIGURE 1

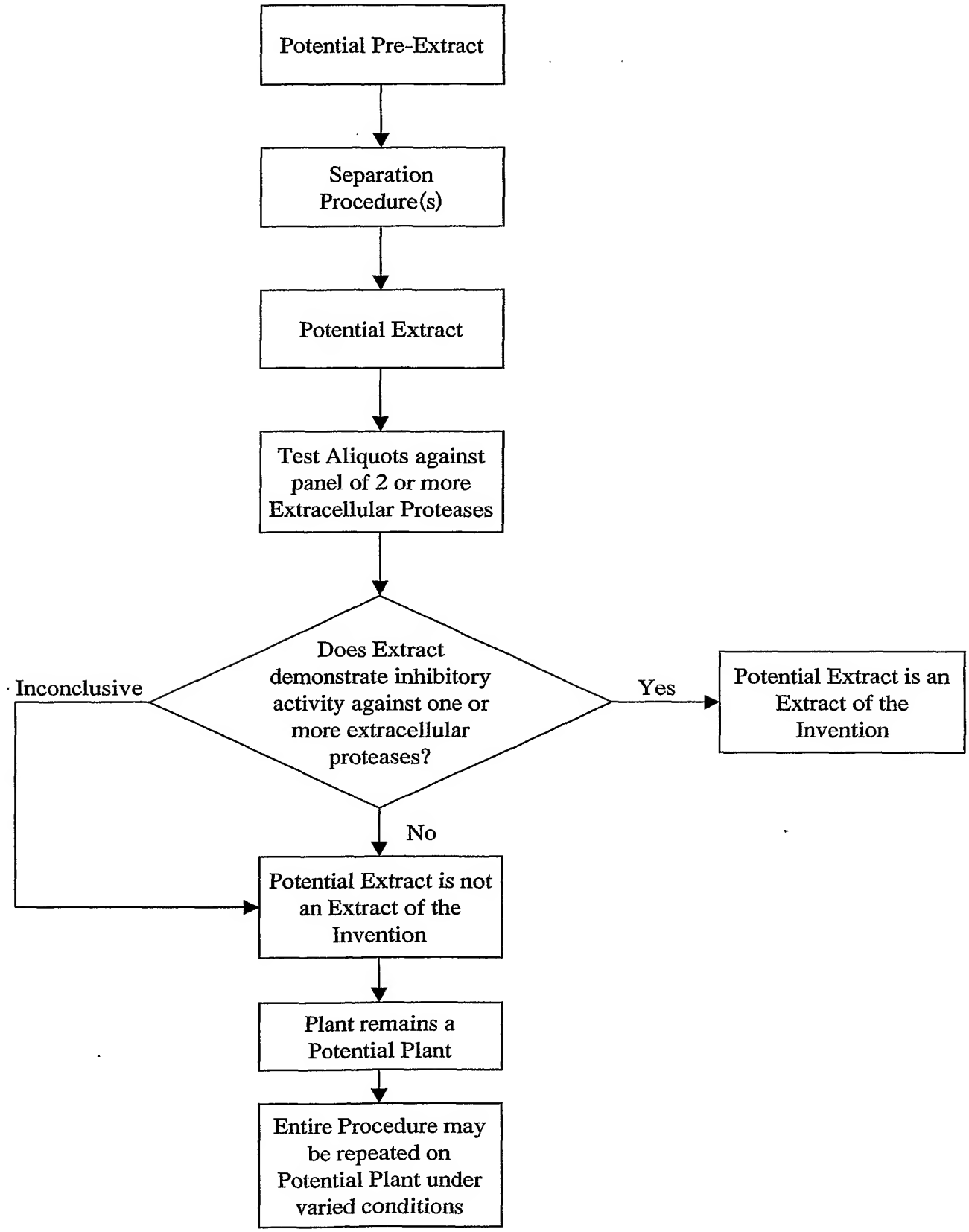
Potential Pre-Extract
Separation Procedure(s)
Potential Extract
Test Aliquots against panel of 2 or more Extracellular Proteases
Does Extract demonstrate inhibitory activity against one or more extracellular proteases?
Inconclusive
Yes
Potential Extract is an Extract of the Invention
No
Potential Extract is not an Extract of the Invention
Plant remains a Potential Plant
Entire Procedure may be repeated on Potential Plant under varied conditions

FIGURE 2

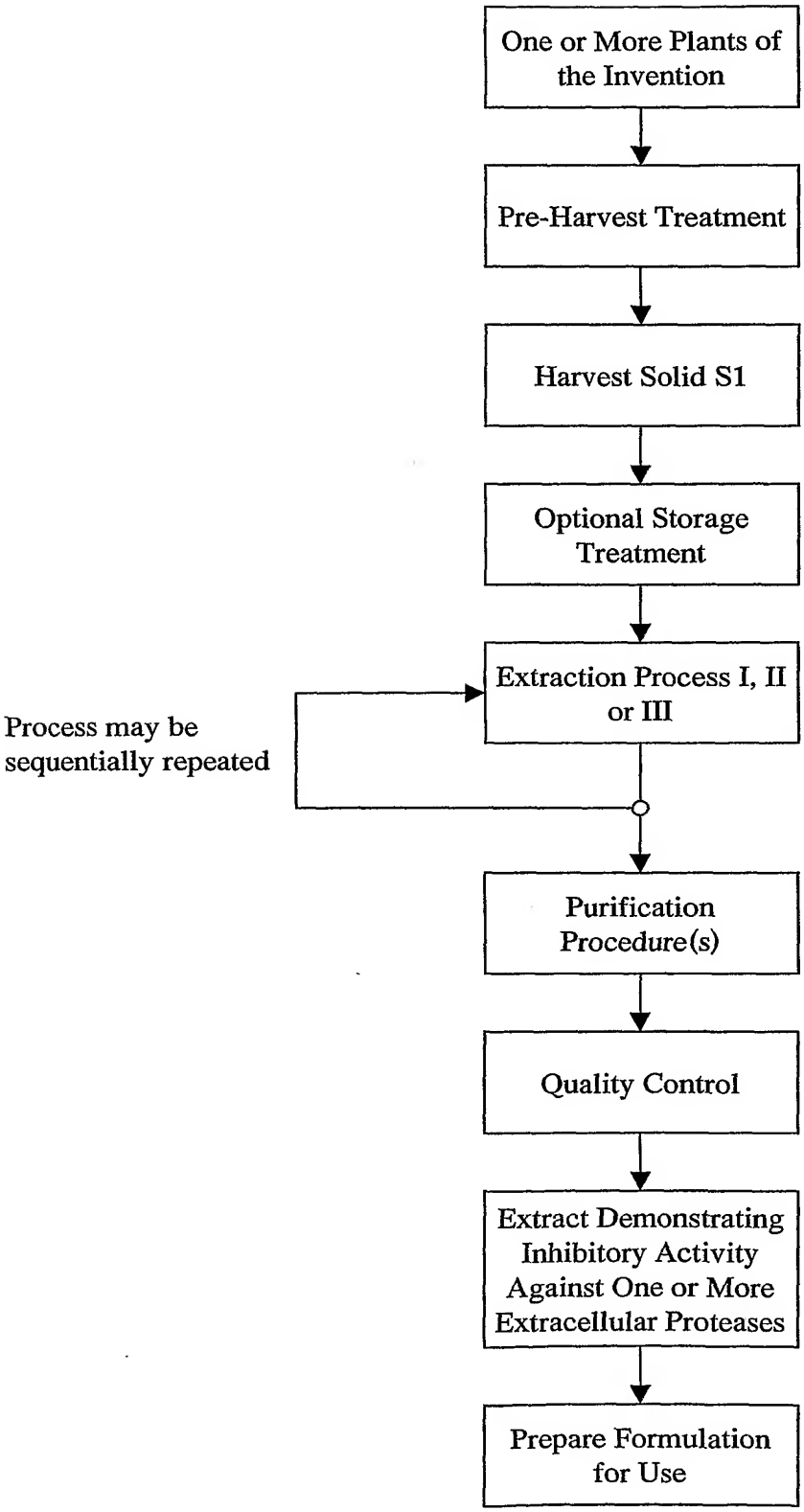
One or More Plants of the Invention
Pre-Harvest Treatment
Harvest Solid S1
Optional Storage Treatment
Extraction Process I, II or III
Process may be sequentially repeated
Purification Procedure(s)
Quality Control
Extract Demonstrating Inhibitory Activity Against One or More Extracellular Proteases
Prepare Formulation for Use

FIGURE 3

INTERNATIONAL SEARCH REPORT

In ional Application No
PCT/CA 02/00285

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61K35/78 A61P43/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

BIOSIS, EPO-Internal, WPI Data, PAJ, FSTA, MEDLINE, LIFESCIENCES, CHEM ABS Data, CAB Data, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE BIOSIS 'Online! BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; 1994 LOPEZ FELICIE ET AL: "Accumulation of a 22-kDa protein and its mRNA in the leaves of Raphanus sativus in response to salt stress or water deficit." Database accession no. PREV199497454665 XP002205162 abstract & PHYSIOLOGIA PLANTARUM, vol. 91, no. 4, 1994, pages 605-614, ISSN: 0031-9317 --- -/--	1-7

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
9 July 2002	23/07/2002

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Rempp, G

INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA 02/00285

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE BIOSIS 'Online! BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; 1992 HOMER K A ET AL: "INHIBITION OF PEPTIDASE AND GLYCOSIDASE ACTIVITIES OF PORPHYROMONAS-GINGIVALIS BACTEROIDES-INTERMEDIUS AND TREPONEMA-DENTICOLA BY PLANT EXTRACTS" Database accession no. PREV199294006211 XP002205163 abstract & JOURNAL OF CLINICAL PERIODONTOLOGY, vol. 19, no. 5, 1992, pages 305-310, ISSN: 0303-6979	1-3
X,P	FR 2 812 544 A (OREAL) 8 February 2002 (2002-02-08) page 3, line 19 -page 7, line 34	1-3

INTERNATIONAL SEARCH REPORT

Information on patent family members

In ional Application No
PCT/CA 02/00285

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2812544 A	08-02-2002	FR 2812544 A1	08-02-2002